

Mapping of

ELECTROMOBILITY

Companies in Mexico

2ND EDITION 2023



PRESENTED BY:



Companies in the automotive sector that take part in the electromobility supply chain increased 79.7% in just four months from our last report!

In this first semester, Directorio Automotriz detected 65 new investments in the electromobility sector in Mexico. And the forecasts for production and sales of electric vehicles in the national market for the end of the year also increased!

From March to June of this year, many new companies related to the supply of components for electric vehicles have arrived in the country, and others with existing manufacturing sites have begun to migrate to electrified platform projects.

This trend will continue to grow exponentially, since Mexico is shaping up to be one of the largest producers of electric vehicles worldwide thanks to the conditions of the USMCA treaty regarding the increase in regional content to 75%, the nearshoring caused by the arrival of new automakers such as Tesla that seek to locate their suppliers in the country, and the international commitments of governments and OEMs to transition to sustainable mobility at the end of this decade.

It is thanks to the power of tools such as the **Directorio Automotriz** B2B platform, that it is possible to record and map the increase in companies that are inserted in the electromobility supply chain in Mexico.

We invite you to get all the in-depth information you need in this second edition of our Mapping of Electromobility Companies in Mexico, which we will update towards the end of the year, as we are sure that the current forecast for the arrival of new investments related to electric vehicles will continue to increase

Discover more in **Directorio Automotriz**'s Automotive Investment Report 2Q 2023 here





ELECTROMOBILITY IN MEXICO:

A HISTORIC JOURNEY IN CONSTANT EVOLUCIÓN

Let's go back in time for a bit to learn about the history of mass production of electric vehicles in Mexico. This only began in February 2020, when production of Ford's first electric vehicle began worldwide at its Cuautitlán Izcalli plant, of course we are talking about the Mustang Mach-E. As of the date of writing this whitepaper, Ford has assembled more than 189,000 units of the electric SUV and is expected to produce more than 130,000 units in the full year 2023 alone.

Electric Light Vehicles Produced in Mexico 2020-2023

2020 **6.717** UNITS

2021 **58,453** UNITS (+770.2% vs 2020)

2022 **79,471** UNITS (+34.2% vs 2021)

2023 **47,781** UNITS

TOTAL 192,422 UNITS

Shortly after Ford's milestone, in April 2020, another much smaller brand, JAC Mexico with its Giant Motors Latin America plant in Hidalgo, would become the second automaker to produce 100% electric vehicles and the first to do so specifically for the national market. Its E10X model has become a true sales success in the EV segment in the country.

If we go a little further in time, to the month of June 2023, we have another milestone. The workers of the General Motors complex in Ramos Arizpe shared on their social networks and work groups the production output of the first units of the **Chevrolet Blazer EV** that, by the last quarter of 2023, will be introduced to the Mexican national market. GM invested 1,000

million dollars to reconvert this complex and it took more than a year to do so, adopting the Ultium platform of batteries and electric motors with which the Equinox EV model will also be produced at some point of the third quarter of 2023.

And only in the first half of 2023, manufacturers such as BMW and Stellantis have officially announced the manufacture of electric models in Mexico, the first for 2027 with an investment of **872 million dollars** that includes a high-voltage battery plant; and **Stellantis** at the end of this year, for which they invest **200 million dollars** in adapting their production lines.

Additional official announcements could still happen in the second half of 2023 by **Audi, Volkswagen, Nissan, and KIA**, the latter was said by Nuevo León

Model	Production 1H 2023
Ford Mustang Mach-E	46,238 (+36.21%)
JAC E 10X	1,259 (+137.09%)
JAC ESei 4 Pro	78 (+3,800%)
JAC E J7	176 (-11.6%)
JAC E SUNRAY / City	30 (+7.1%)
JAC E X350	24 (+0.0%)
Blazer EV	N/D*

 $^{\star}GM$ hasn't reported to INEGI how many units were produced at the end of June 2023.



Ford Mustang Mach-E



JAC E 10X



JAC ESei 4 Pro



governmentauthoritiestoproduce two electric vehicles very soon, while the OEM has not confirmed it, despite the investments of its suppliers on site that are aimed at future electromobility projects. On the center of the country, Audi has already taken a first step by producing hybrid versions of the Audi Q5 models for some years now and it seems that this year it could formally announce the integration of a fully electric model at its plant in San José Chiapa, Puebla.

Of course, the icing on the cake at the moment is the arrival in late 2024 or early 2025 of Tesla, which confirmed its arrival at the beginning of March 2023.

324,000 square meter Gigafactory Mexico will initially have 9 suppliers on site and 16 later on. Its construction could begin in the third quarter of this year, lasting between 12 and 14 months. According to the Secretary of Economy, just the installation of a Tesla gigafactory in Mexico implies an investment of 5,000 million dollars, that is, some 15,000 million that could be generated in investments from suppliers of all levels and indirect suppliers across the supply chain.

Next, we update our forecasts for the production and sales of electric vehicles in Mexico in the vear 2023:

Model	Production 2023 forecast (units)
Ford Mustang Mach-E	+-130,000*
Chevrolet Blazer EV	+-60,000**
Chevrolet Equinox EV	+-30,000**
ProMaster EV	n/d***
RAM 1500 EV	n/d***
JAC E 10X	2,980
JAC ESei 4 Pro	200
JAC E J7	340
JAC E SUNRAY / City	60
JAC E X350	60
TOTAL	223,640 (+181.41% vs 2022)

^{*} Forecast bound to production stops or diminished demand for

Sourcess: INEGI, AMIA, INA, Stellantis, GM, Ford, JAC México. SE. Compound forecast by Directorio Automotriz.

YEAR / PERIOD	SALES BATTERY ELECTRIC (BEV)	SALES HYBRID PLUG-IN (PHEV)	SALES HYBRIDS (HEV)	TOTAL ELECTRIFIED LIGHT VEHICLE SALES
2019	305	1,365	23,938	25,608
2020	449 (+47.2%)	1,986 (+45.4%)	21,970 (-8.3%)	24,405 (-4.7%)
2021	1,140 (+153.8%)	3,492 (+75.8%)	42,447 (+93.2%)	47,079 (+92.9%)
2022	5,631 (+394.9%)	4,575 (+31.0%)	40,859 (-3.8%)	51,065 (+8.4%)
JAN-APR 2023	3,150	1,506	13,127	17,783
FORECAST END OF 2023	10,898 (+93.5%)	7,618 (+66.5%)	40,633 (-0.6%)	59,149 (+15.8%)

Sources: INEGI, data analysis and chart by Directorio Automotriz. Compound forecast made by Directorio Automotriz.





^{**}Forecast bound to production start dates which may change **** Not enought data for a forecast yet.

: This forecast increased against the previous edition of this



Electrification timeline

ELECTRIFICATION TIMELINE IN THE MEXICAN AUTOMOTIVE INDUSTRY

MAY

Toyota begins selling the Prius hybrid in Mexico, the first model of its kind in the country.

SEPTEMBER

2011

Nissan introduces its Nissan Leaf electric vehicle to Mexico with fleet pilot programs.

JULY

2014

Nissan begins the free sale of the Nissan Leaf in dealers throughout Mexico.

JANUARY

2017

Ford begins producing the Ford Fusion Hybrid at the Hermosillo plant.

The Toyota Prius reaches 10 thousand units sold in Mexico.

DECEMBER

Ford begins production of the hybrid Lincoln MKZ at the same plant.

NOVEMBER

The Toyota Prius reaches 30 thousand units sold in Mexico.

AUGUST

BMW Group Plant San Luis Potosí begins production of the BMW 330 e (Hybrid 3 Series).

JUNE

Ford ends production of the Fusion and Lincoln MKZ hybrids.

FEBRUARY

2020

Ford begins production of the Mustang Mach-E at the Ford Cuautitlán plant, the first EV made in Mexico. MAY

2019

Audi Mexico begins production of the hybrid version of the Audi Q5 at the San José Chiapa plant.

2021

MARCH

Ford begins production of the Maverick model, the first hybrid pick-up made in Mexico.

APRIL

JAC México begins the production of electric vehicles exclusively for the national market.

NOVEMBER

2022

Ford Cuautitlán reaches the production of 150 thousand units of the Mustang Mach-E.

FEBRUARY

2023

BMW Group Plant San Luis Potosí invests 800 MDE to produce electric vehicles and high-voltage batteries by 2027.

MARCH

Tesla announces that it will install the Gigafactory Mexico in Nuevo Leon to produce your next vehicle generation.



2024

Volkswagen is expected to start its expansion at the Silao engine plant to produce electric motors for BEVs.

APRIL

TMMGT (Toyota Motor Manufacturing Guanajuato) will begin production of the hybrid version of the Tacoma.

DECEMBER

According to sales projections, battery electric vehicles (BEV) will exceed 10,000 annual sales in Mexico for the first time.

OCTUBRE - DICIEMBRE

GM Ramos Arizpe will start production of the Chevrolet Equinox EV.

Stellantis will begin production of the ProMaster EV and the RAM 1500 REV electric pick-up at its Saltillo complex.

JUNE

GM Ramos Arizpe starts production of the Chevrolet Blazer EV.



Q4 2024- Q1 2025

Tesla will inaugurate the Gigafactory Mexico in Nuevo Leon to produce your next vehicle generation. BMW Group Plant San

2027

Luis Potosí will start production of electric NEUE KLASSE vehicles with high voltage batteries. Mazda de México Vehicle Operation will begin production of electric

vehicles at its Salamanca plant, according to statements by its global CEO in July 2023.

2028





¿How can this mapping report help me?

If you are an automotive buyer, this document will be a powerful tool in the search for certified supplier companies in specific systems or components. This mapping will help you locate the closest suppliers to your company.

If you are a supplier, this mapping will help you identify in which states of the country there is a greater demand for suppliers in your category.

What does this Directorio Automotriz mapping include?

In this whitepaper you will be able to find and have direct access to 178 manufacturers, buyers and suppliers related to electric vehicles and electromobility* divided into 3 levels, 9 categories and 28 subcategories with a presence in more than 25 states. This represents a growth of 79.7% against the previous mapping, in just 4 months.

What you could find in future editions of this mapping

We are working continuously to expand this Electromobility Mapping in future editions. As suppliers from the sector continue to arrive in Mexico and we continue to register companies within the Directorio Automotriz platform, we will include or expand the following subcategories:

- · Generators.
- · Nickel Metal Hydride EV batteries.
- · Lithium-ion EV Batteries.
- Power control unit cooling system.
- PTC heaters.
- · Integrated climate system.
- · Lithium mining and processing.

*Some suppliers in the categories listed in this document participate in multiple categories or subcategories of components, parts, and systems and are therefore counted separately. In Mexico there are more than 2,200 automotive plants, whether OEM, Tier 1, Tier 1 or Tier 3. The states with the largest number of plants are Guanajuato, Coahuila, Chihuahua, Querétaro and Nuevo León.

(OEM/ASSEMBLY)

Assembly plants of electric and hybrid vehicles in Mexico

- · Ford Planta Cuautitlán
- · General Motors Complejo Ramos Arizpe
- BMW Group Planta San Luis Potosí
- · Audi México Planta San José Chiapa
- Giant Motors Latinoamérica (JAC México, CD. Sahagún, Hidalgo)
- Toyota Motor Manufacturing Guanajuato TMMGT (Apaseo el Grande, Guanajuato)

(TIER 1.2

Electromobility and electrification components

- Batteries/Capacitors and associated components (+44.4%)*
 - · Battery case & housing
 - Battery chargers (wall and on board)
 - · Battery harnesses and cables for EVs
 - EV Battery Management Systems (BMS)
- Electric Powertrain (+46.67%)*
 - Drive Motors (permanent magnet and induction drive motors)
 - E-Axles (electric drive axle)
 - Electric Drivetrain (parts of the electric powertrain system)
- Fuel Cell Systems (+100%) (+100%)*
- Power Control Unit (PCU)
 - DC converters
 - Inverters
 - Electronic motor control units (Power ECU)
- Cooling systems and thermal management for EV's (+46.15%)*
 - EV battery cooling system
 - · Drive motor cooling system
- EV Heat pump system

• Other suppliers of components for Electric Vehicles (+242.86%)*

- · Chassis and bodies
- Components for electromobility and electrification
- Electrical and electronic parts
- Exteriors
- Interiors
- · General parts and commodities
- Powertrain
- · Wheels and tires

(TIER 3, PRODUCTS & SERVICES)

Suppliers of raw materials, products and services for EV manufacturers (+300%)*

- Products
 - Abrasives
 - $\cdot \, \mathsf{Equipment} \, \& \, \mathsf{supplies} \,$
 - Assorted products
- Raw Material:
 - Steel
 - Rubber
- Servicios:
 - General services generales
- Specialized services & consulting



^{*} Growth percentage compared to the previous edition.



Headquartered in Kyoto, Japan,

Omron Corporation is a global leader in the field of automation. Established in 1933, and currently led by Chairman Yoshihito Yamada, Omron now has more than 36,000 employees in 110 countries, working to provide products and services to customers in a variety of industries.

OMRON offers equipment for control, safety, vision, motion and robotics that can be used in the automotive, semiconductor, packaging, food, and beverage industries, among others. They have a complete automation platform that is designed to optimize the process life cycle, with data controls integrated into a single software.



FOR MORE INFO. PLEASE CONTACT:

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https://automation.omron.com/es/mx/

COMPANY NAME: OMRON

COUNTRY OF ORIGIN: Japón

LOCATION:

Central Offices in CDMX and different sales representatives all over the mexican republic.

YEAR OF START OF OPERATIONS: 1933

SERVICES OFFERED:

Equipment for industrial automation (Control equipment, safety in machinery, vision systems, movement, robotics, sensors and components). Security and maintenance services of robotics.

NUMBER OF EMPLOYEES: + 36.000 worldwide.

SECTORS SERVED:

Automotive industry
Food and Beverage Industry
logistics industry
Electric Vehicle Industry
Electronic industry
Pharmaceutical industry



(OEM/ASSEMBLY)



6 Final Assembly BEV and Hybrid vehicle PLANTS IN MEXICO



Ford Planta Cuautitlán



General Motors Complejo Ramos Arizpe



BMW Group Planta San Luis Potosí



Audi México Planta San José Chiapa



Giant Motors Latinoamérica (JAC México, CD. Sahagún, Hidalgo)



State	Number of suppliers
Coahuila	1
Estado de México	1
Hidalgo	1
Guanajuato	1
Puebla	1
San Luis Potosí	1



(TIER 1, 2)



132 Suppliers of Electromobility AND ELECTRIFICATION COMPONENTS

o Battery case & housing o Wall & on board chargers o Wire harnesses and battery harness for EVs

EV battery management systems (BMS)

State	Number of suppliers
Baja California	2
Chihuahua	3
Coahuila	8
Durango	5
Guanajuato	13
<u>Jalisco</u>	3
Estado de México	1
Nayarit	1
Nuevo León	6
Puebla	1
Querétaro	3
<u>Tamaulipas</u>	5
Tlaxcala	1

∠ SUPPLIERS

FUEL CELL SYSTEMS

State	Number of suppliers
Estado de México	1
Nuevo León	1



22 SUPPLIERS

ELECTRIC POWERTRAIN

o Drive Motors (permanent magnet and induction drive motors)

o E-Axles

o Electric Drivetrain

State	Number of suppliers
Aguascalientes	1
Chihuahua	1
CDMX	1
Coahuila	1
Guanajuato	7
Jalisco	2
Nuevo León	3
Puebla	1
Querétaro	3
San Luis Potosí	1
Zacatecas	1

13 SUPPLIERS

POWER CONTROL UNIT SUPPLIERS (PCU)

o DC converters
o Inverters
o Power ECU

State	Number of suppliers
Aguascalientes	1
Chihuahua	1
Coahuila	1
Guanajuato	4
Jalisco	1
Nuevo León	1
Puebla	1
Querétaro	1
Tamaulipas	1
Tlaxcala	1



19 SUPPLIERS COOLING AND THERMAL MANAGEMENT SYSTEMS FOR EVS

EV battery cooling system
 EV Drive motor cooling system
 EV heat pump system

State	Number of suppliers
Chihuahua	1
Coahuila	5
Guanajuato	7
Estado de México	1
Nuevo León	3
Querétaro	1
Zacatecas	1

24 SUPPLIERS

OTHER COMPONENTS FOR ELECTRIC VEHICLES

o Chassis and bodies

o Components for electromobility and electrification

o Electric and electronic parts

o Exteriors

o Interiors

o Powertrain

o General Parts & commodities

o Wheels and tires

State	Number of suppliers
Chihuahua	1
Coahuila	2
Guanajuato	6
Jalisco	2
Nuevo León	7
Querétaro	4
San Luis Potosí	1
Tamaulipas	1



(TIER 3, PRODUCTS & SERVICES)



40 Suppliers of raw materials, PRODUCTS AND SERVICES FOR EV

MANUFACTURERS

SUPPLIERS

PRODUCTS

o Abrasives o Equipment & supplies o Assorted products

State	Number of suppliers
CDMX	1
Guanajuato	2
Jalisco	1
Estado de México	2
Nuevo León	1
San Luis Potosí	1
Veracruz	1

27 SUPPLIERS

RAW MATERIALS

o Rubber o Steel

State	Number of suppliers
Coahuila	3
Hidalgo	1
Nuevo León	17
San Luis Potosí	6

SUPPLIERS

SERVICES

o General Services o Specialized services & consulting

State	Number of suppliers
CDMX	1
<u>Guanajuato</u>	1
Nuevo León	1
San Luis Potosí	1



Are you a supplier and do not appear on the lists in this document?

Register right now in **Directorio Automotriz** and make yourself visible to buyers who are looking for your supply capabilities.

We are adding new direct contacts from purchasing and supplier companies daily, as well as requirements, integrating a live and interactive business ecosystem to bring you closer to the business link you are looking for

Doubts and More Information

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