

National Network of Electric Power Charging Stations

Contact.	Subsector	Related Entities	SDGs
Ventanilla Única de Inversión VIU. Tel: (+57) 601 606 7676 info@mincit.gov.co	Electric Energy	Ministry of Mines and Energy (MME) FENOGÉ Ministry of Transport National Planning Department (DNP)	  

National Development Plan (NDP). Transformation / Strategy.

Productive Transformation, Internationalization, and Climate Action.	Infrastructure for public projects and public-private partnerships adapted to climate change and with lower emissions
	Charging infrastructure to enable the technological upgrading of the transport sector.

ESG Considerations

Environmental:	- Develop enabling conditions to facilitate the adoption of cleaner technologies in vehicle mobility.
Social:	<ul style="list-style-type: none"> - Promotion of grassroots economies across different regions of the country. - Generation of sustainable jobs during the construction phase. - Generation of sustainable jobs during the operation phase
Governance:	- Implementation of management models based on reliable and transparent information as support for administration.

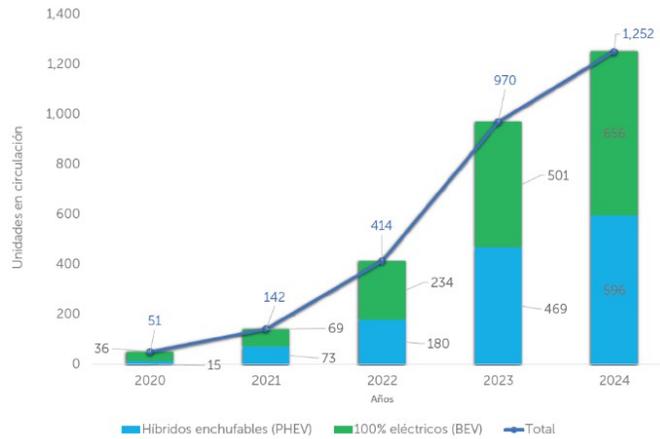
Business Overview

Objectives.	<ul style="list-style-type: none"> - Deploy a nationwide interconnected and interoperable network of Service Stations (EDS) for plug-in vehicle (EV1) charging, based on non-conventional renewable energy sources (NCRES). - Achieve financial closure of the project. - Adjust technical and business conditions following pilot testing (EDS in progress). - Promote regulatory agenda for component standardization in e-mobility. - Launch operations efficiently within less than 2 months. - Stabilize operations, reaching the projected profitability point with an IRR of 24.21%. - Recover the investment within a 5-year period.
Scopes.	<ul style="list-style-type: none"> - Includes: - Financial closure as a precondition to contractual obligations by the investor. - Turnkey installation of NCRES-based productive infrastructure for EDS. - Transfer of operational model through documentation and training of investor's staff. - Information platform (CARGAME software) for management. - Technology transfer for renewable and non-conventional energy production. - Excludes: - Working capital for unit operation. - Coverage of operational losses. - Decision-making on operational, tactical, or strategic aspects of the business unit.
Target.	<ul style="list-style-type: none"> - +100 NCRES-based EDS nationwide by end of 2025 - +20,000 connectors; ~7,000 NCRES-based EDS nationwide by end of 2026

Business Overview

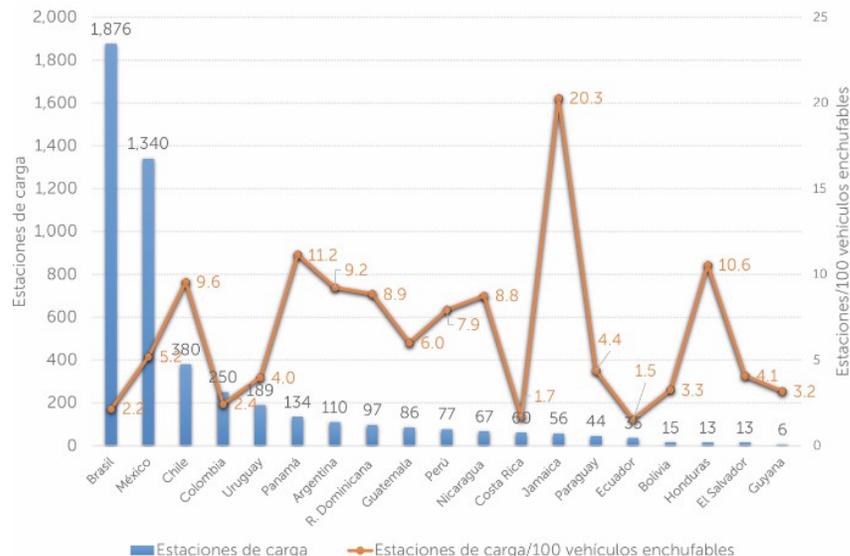
Demand Growth

- EV market share in Colombia remains under 1% of the national vehicle fleet (Ramírez, 2024).
- Current stage corresponds to **demand growth phase** in the product lifecycle, aligned with global and regional dynamics.
- Colombia is in a pre-commercial maturity stage, where demand for charging infrastructure is expected to grow faster than supply.



Market Opportunity.

In marketing terms, this phase is ideal for the development of projects whose demand is driven by the dynamics of EV adoption, such as electric charging stations (EDS). The incorporation of EVs in Colombia is currently in a stage prior to the commercial maturity of the technology (when the market begins to saturate), during which demand for electric charging EDS is expected to grow partially unmet by the existing supply (Sonnenmann et al., 2015).



Business Overview

In developed countries, up to three-quarters of new cars sold are electric vehicles, and bans on the use of combustion engines are expected in less than 10 years (García, 2025), which forecasts continued growth of this market.

Exceptional Conditions

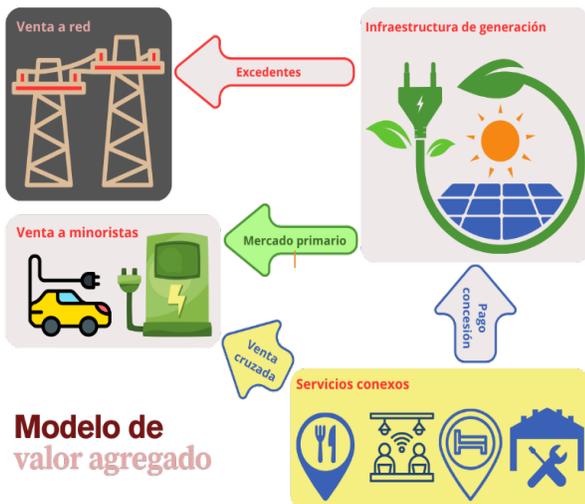
- Financial model with payback under 5 years.
- Legal certainty supported by a regulatory agenda from the Ministry of Mines and Energy (MME) for the standardization and regulation of e-mobility components.
- Green job creation and promotion of the national industry.
- Tax benefits: fiscal incentives, subsidies, financing agreements.
- Opportunity to enter high-growth markets with strong demand for clean energy and sustainability, while diversifying portfolios.

Low Supply Intensity

The process of closing Colombia's gap in EV adoption, combined with the underdeveloped charging station (EDS) infrastructure, creates highly favorable market conditions for the project outlined in this document.

- As of 2024, there is not only a limited number of charging EDS, but also one of the lowest EV-to-charging-station ratios in the region (Castillo Moreno et al., 2024; OLADE, 2024).
- Therefore, market growth should be driven not only by the increase in EV adoption but also by improving the EV-to-charging-station ratio.

3



The business model generates value for the primary end-user (the retail consumer seeking to charge their EV) directly through the supply of NCRES-based electricity, delivered at a branded charging station (EDS). Additional value can also be created through a set of ancillary services that enhance the user experience while at the station, while simultaneously providing the Business Unit with extra income through concessions (for services not operated directly). Surplus energy not commercialized for the primary user is sold to the national transmission grid.

Prototype Business Unit

Energy station (3 fast-charging connectors: CCS1 30kW + CCS2 30kW + GBT 40kW), with photovoltaic generation consisting of 21 solar panels of 580W each, installed on carports for 3 vehicles. Land is not included; agreements are in place with property owners.

Business Model

<p>Key Partners</p> <ul style="list-style-type: none"> Ministry of Mines and Energy Generation infrastructure maintenance provider Ancillary services partners 	<p>Key Activities</p> <ul style="list-style-type: none"> Maintenance of generation infrastructure Maintenance of ancillary service areas <p>-</p> <p>Key Resources</p> <ul style="list-style-type: none"> Renewable energy generation infrastructure Working capital <p>-</p>	<p>Value propositions</p> <ul style="list-style-type: none"> Use of NCRES-based energy Ancillary service complex for drivers Consumer support platform Contribution to climate change mitigation <p>-</p>	<p>Customer Relationships</p> <ul style="list-style-type: none"> Ancillary services for drivers Ongoing consumer support <p>Channels</p> <ul style="list-style-type: none"> Direct sales at EDS Mobile app for station location <p>-</p>	<p>Customer Segments</p> <ul style="list-style-type: none"> Retail consumers (private vehicles) National grid operators Corporate electric fleets <p>-</p>
<p>Cost Structure.</p> <ul style="list-style-type: none"> EDS personnel Private security Maintenance of renewable generation infrastructure Land lease/servitude <p>-</p>		<p>Revenue Streams</p> <ul style="list-style-type: none"> Sale of electricity (per kWh) to end users Sale of electricity (per kWh) to the national grid Concessions from ancillary services <p>-</p>		

4

Project Timeline			
Phase	Duration	Predecessor	Milestone
Pilot testing	6 months	none	Pilot performance results
Investor call	N/A	None	Publication in VUI
Financial closure	N/A	2	Binding commitments
EDS construction	1-1,5 months	3	Construction completion
EDS operations start	5/06/2025	4	Launch of operations
EDS staff training	3-4 weeks	3	Training completion
Stabilized operations	3- 4 months	5,6	Operations monitoring report

Financial Parameters - Investment		
Installed	Amount	
	COP	USD
Starter: One (1) energy station*.	COP 300MM	USD 75,000
Small Businesses: Less than ten (< 10).	<COP 3,000MM	<USD 750,000
Green Companies: Between ten and fifty (10 - 50).	< \$ 15.000 MM	< \$ 3.600.000
Gold Companies: >50 stations - >COP 15,000M / >USD 3.6M	> \$ 15.000 MM	> \$ 3.600.000

Financial Parameters – Cash Flow					
Revenue Parameters			Expense Parameters		Results
Parameter	Quantity	COP	Parameter	COP	
Generation (kWh / month)	1000	\$930	Infrastructure Maintenance (COP / month):	\$1.667.000	IRR = 24.21%. NPV = COP 316,000,000 (Discount rate = 18%) Payback = 5 years
Retail Sales (kWh / month)	3672	\$1.600	Personnel Expenses (COP / month)	\$2.000.000	
Grid Sales (kWh / month)	1000	\$ 1.0 - 1.3M	Administrative Expenses (COP / month)	\$500.000	
Concessions (COP / month)	According to	\$	Concessions (COP / month)	\$	

5

Risk Management Plan					
Event	Probability	Impact	Rating	Mitigation	Contingency
Low energy demand	Low	High	Medium	Partnerships with public & private entities	Strengthen alliances
Technological obsolescence	Low	Medium	Low	Continuous monitoring of charging technologies	Financing mechanisms for tech upgrades
Equipment reliability	Low	High	Medium	Preventive & predictive maintenance programs	Synergies in interconnected EDS network
Regulatory compliance	Low	High	Medium	Knowledge transfer to EDS	Strengthen EDS network synergies
Social impact in local communities	Low	Medium	Low	Community engagement sessions	Regional administration mediation

Reference

Castillo Moreno, T., García Lucero, F., Rivadeneira Merino, T., Segura González, K., & Yujato Toasa, M. (2024). Panorama energético - ALC-2024 (No. Primero). OLADE Organización Latinoamericana de Energía. <https://www.olade.org/wpcontent/uploads/2025/02/PANORAMA-ENERGETICO-ALC-2024.pdf>

García, J. F. (2025, marzo 4). El «boom» de los carros eléctricos en Colombia: Unas cifras de alto voltaje | Cambio Colombia. Revista Cambio. <https://cambiocolombia.com/cultura/los-alucinantes-numeros-de-los-carros-electricos-en-colombia>

Orozco, Á. (2022, julio 6). Colombia tiene 8.299 vehículos eléctricos en el Runt, 1.699 más de la meta del Plan Nacional de Desarrollo. Mintransporte. <https://mintransporte.gov.co/publicaciones/11015/colombia-tiene-8299-vehiculos-electricos-en-elrunt-1699-mas-de-la-meta-del-plan-nacional-de-desarrollo/>

Prieto Herrera, J. Eliécer. (2020). Merchandising: La seducción en el punto de venta. En Merchandising: La seducción en el punto de venta (3a. edición.). Ecoe Ediciones.

Ramírez, F. (2024, febrero 19). Realidad sobre lo que pasa con los carros eléctricos e híbridos en Colombia no gusta mucho. pulzo.com. <https://www.pulzo.com/carros/runt-dice-cuantos-carros-electricos-hay-colombia-mayoria-con-gasolinaPP3456300>

Sonnemann, G., Margni, M., Margni, M., & Sonnemann, G. (2015). Life Cycle Management (1st ed. 2015). Springer Nature

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