

Zero-Emission Vehicles

UNIVERSITY OF CALIFORNIA ALIANZA MX

BINATIONAL WORKING GROUP

Given the global imperative to reduce emissions, both Mexico and the United States are experiencing significant shifts in their automotive industries. These disruptions present opportunities for enhancing economic competitiveness and environmental protection in North America through the transition to zero-emission vehicles (ZEV).

In the United States, new federal legislation has explicitly supported an expansion of public investment in this transition, aiming for a majority of new light vehicle sales to include ZEV technologies by 2032. At the state level, California has proposed ambitious regulations to achieve a zero-emission truck and bus fleet by 2045. However, these ambitious targets have also generated questions about the feasibility of producing ZEV at competitive prices, particularly for lower-income consumers, and for sufficient development of infrastructure (e.g., charging stations) required to support the transition.

While Mexico has shown promise in becoming a hub for ZEV production, it still faces key challenges: establishing a robust local supply chain, investing in necessary infrastructure, and managing production shifts from traditional combustion engines to battery-powered vehicles and other ZEV technologies.

In response to these challenges, University of California Alianza MX has actively supported several phases of binational collaboration focused on advancing the binational transition to ZEV technologies.

FIRST PHASE: Task Force

Alianza MX, the Mexican Ministry of Foreign Affairs (SRE), and the Institute of Transportation Studies (ITS) at UC Davis launched the “US-Mexico High-level Task Force for the Electrification of Transport” in February of 2022. This task force sought to create a road map for a managed industry transition that ensures prosperity, competitiveness, and inclusion for the US-Mexico transportation industry. It had three specific and interrelated goals:

1. To build a strategic multi-stakeholder coalition.
2. To design and develop research and analysis that responded to the policy needs of different stakeholders.
3. To develop a consensus set of policy recommendations through dialogue.

The Task Force began by identifying project stakeholders as well as their goals and concerns about the transition, with the objective of preparing recommendations across five themes: Innovation, Human Capital, Supplier Development, Infrastructure, and Governance. Over 160 stakeholders from government, industry, academia, and NGOs participated.

In February 2023, the Mexican government summarized the initial results in a new report:

- [US-Mexico Task Force for the Electrification of Transport: Diagnosis and Recommendations for the Transition of Mexico's Automotive Industry](#)

The work of the Task Force was supported by a [strategic research project](#) led by UC Davis ITS and supported by Alianza MX. This project, "Electrification of Transport: Challenges and opportunities for US-Mexico Transportation Industry," included data collection and interviews with a broad range of stakeholders (including industry representatives, policymakers, think tanks, and NGOs). Through these activities, researchers analyzed existing automotive supply chains, the market for used cars and life cycle for EV batteries, the proliferation of ZEV in public transit systems, investment in charging infrastructure, labor considerations, and US-Mexico border transportation issues.

In April 2023, the project released three policy briefs:

- [Implications of Global Electric Vehicle Adoption Targets for Mexico Light Duty Auto Industry](#)
- [US-Mexico Second-hand Vehicle Trade: Implications for Responsible EV End-of-Life Management and Material Circularity in North America](#)
- [Mexico Electrified: Updating Mass Transit Vehicles to Help Meet Paris Climate Goals](#)

SECOND PHASE: Sub-Working Groups

As the first phase of work neared completion, the Task Force adopted two new objectives:

1. Reduce the number of themes from five to three (light-duty vehicles; medium- and heavy-duty vehicles; and electromobility in cities), each with its own working group.
2. Expand the scope of work beyond electrification of transport to create a "US-Mexico High-level Task Force for Zero-Emission Vehicles."

Over the next year, the Task Force and new sub-working groups each organized separate but related agendas for research and policy dialogues:

- **Light-Duty Vehicles:** In September 2022, Alianza MX hosted a seminar in Mexico City to present a progress report on the UC Davis ITS research to the Light-Duty Vehicles Working Group and to collect further input from industry, government, and academia for delivering results at the UN Climate Summit (COP27) that took place in Egypt that November.
- **Medium- and Heavy-Duty Vehicles:** In October 2022, during Expo Transporte 2022 in the City of Puebla, Mexico, the inaugural meeting of the Medium- and Heavy-Duty Vehicles Working Group was coordinated by Alianza MX, UC Davis ITS, and the Mexican National Association of Bus, Truck and Tractor-Truck Producers (ANPACT).

In February 2023, the College of Engineering Center for Environmental Research and Technology (CE-CERT) at the University of California, Riverside hosted a [binational workshop on the ZEV transition to medium- and heavy-duty vehicles](#). This event provided a space for dialogue between industry actors and policymakers on the challenges and opportunities of the zero-emission transition with respect to California emissions regulations and US trade policy, as well as issues of air quality, infrastructure, electric grid deployment, supply chains, renewable energy, and technology development. Based on the initial input from stakeholders during the workshop, UCR researchers developed a new [strategic research project](#) funded by Alianza MX: “California-Mexico Border Infrastructure Analysis: Medium- and Heavy-Duty Zero-Emission Vehicles.”

- **Electromobility in Cities:** In November 2022, the inaugural meeting of the Working Group on Electromobility in Cities was organized by Alianza MX with input from SRE, UC Davis ITS, the World Resources Institute (WRI), and the Advanced Electric Transportation and Sustainable Mobilities (TEAMS) Group. During this meeting, participants discussed the main opportunities and barriers to electromobility in cities in Mexico in the context of the international transition to zero-emission vehicles, particularly in public transportation.

NEXT STEPS

In 2024, Alianza MX is launching a new strategic initiative to organize binational working groups that engage diverse stakeholders from the United States and Mexico in promoting actionable research and innovative solutions for resilient public policies. This strategic initiative provides a framework to support an evolution from the Task Force’s focus on policy engagement to a ZEV Binational Working Group focused on opportunities for binational research collaboration.

This evolution represents a natural progression in Alianza MX efforts to harness the expertise and skills of UC and Mexican researchers to engage government, industry, and non-profit entities. As a venue for key stakeholders to discuss new opportunities for action research, the Binational Working Group can generate new research proposals for funding from Alianza MX, UC initiatives, and/or extramural sources. And through inclusive decision-making processes that incorporate a broad range of perspectives, the Binational Working Group will continue to promote innovative efforts to pursue shared goals in the binational zero-emissions transition.

For additional information on the Binational Working Group or other opportunities to engage with Alianza MX, please contact Jail Ixel Cruz: jailc@ucr.edu