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Electric Vehicle Research Center

Institute of Transportation Studies

MEXICO ELECTRIFICATION OF TRANSPORT

IN COLLABORATION WITH UC ALIANZA
AND THE UC ITS

GIL TAL

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ELECTRIC VEHICLE RESEARCH CENTER



Research Partners | UC Alianza, UC Davis



Professor Isabel Studer
Director of Alianza MX



Kevin Hernandez Rios
MA student
Transportation
Technology and Policy



Sarah L White
Director of Labor Policy
& Research, Institute of
Transportation Studies



Director, The Electric
Vehicle Research Center,
Institute of
Transportation Studies



Pablo Busch
Ph.D Student, Energy
Graduate Group



Francisco Parés Olgún
Ph.D Student, Energy
Graduate Group, UC
Davis



Professor Alissa Kendall
Department of Civil and
Environmental
Engineering,



Minal Chandra
Postdoctoral Researcher,
The Electric Vehicle
Research Center



Juan Carlos Garcia Sanchez
Policy Analyst, The Electric
Vehicle Research Center,
Institute of Transportation
Studies

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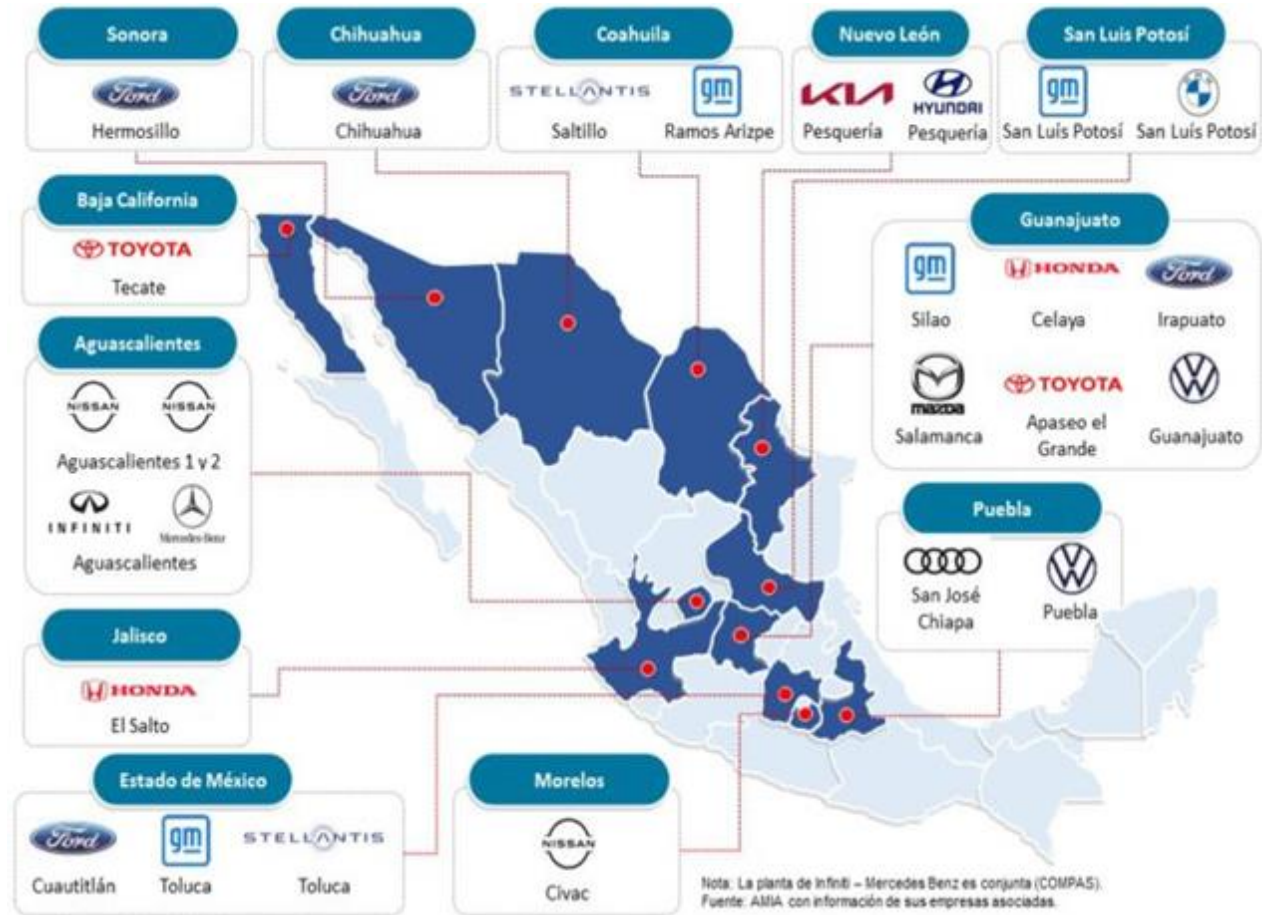
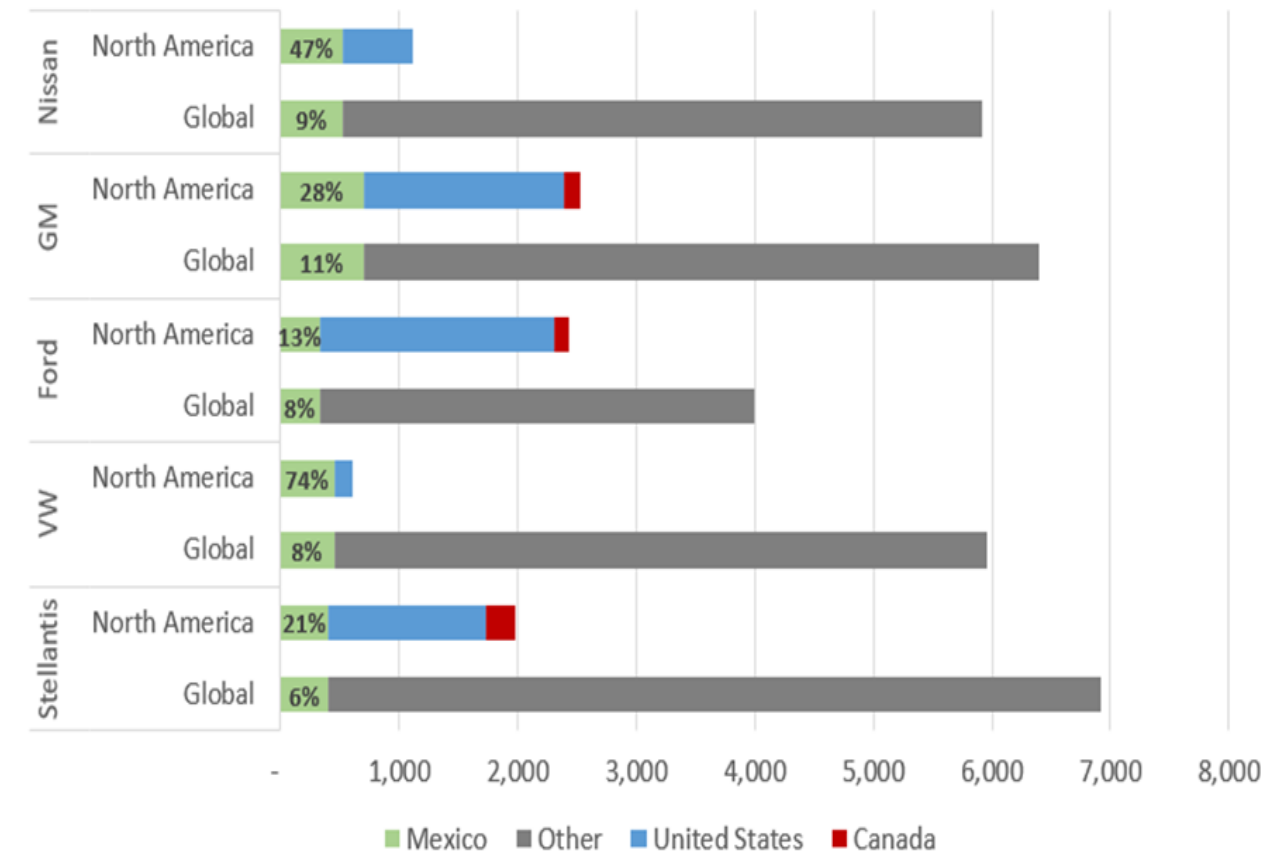
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Implications of Global Electric Vehicle Adoption Targets for the Mexican Light-Duty Auto Industry



Mexico Is a Major player in the North American LDV Industry



Nota: La planta de Infiniti - Mercedes Benz es conjunta (COMPAS).
Fuente: AMIA con información de sus empresas asociadas.

Monet tool: allocate production of vehicles based on (forecasted) demand and trade ratios

$$\text{Production (by country)} = \mathbf{f} (\text{Sales, Trade Ratios})$$

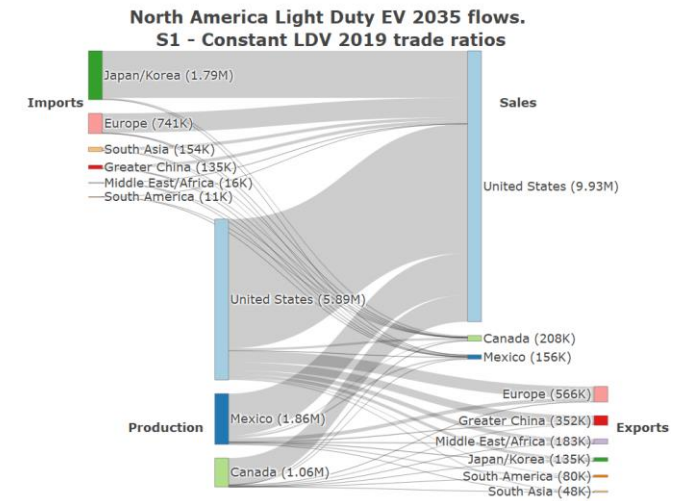
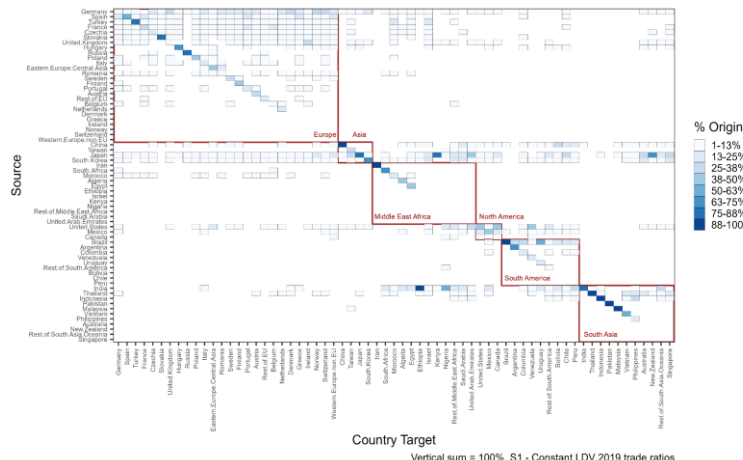
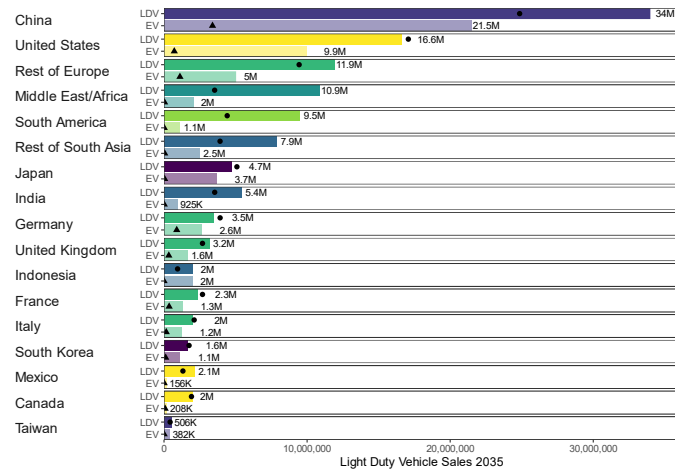
Demand by Country



Trade Ratios



Production by country



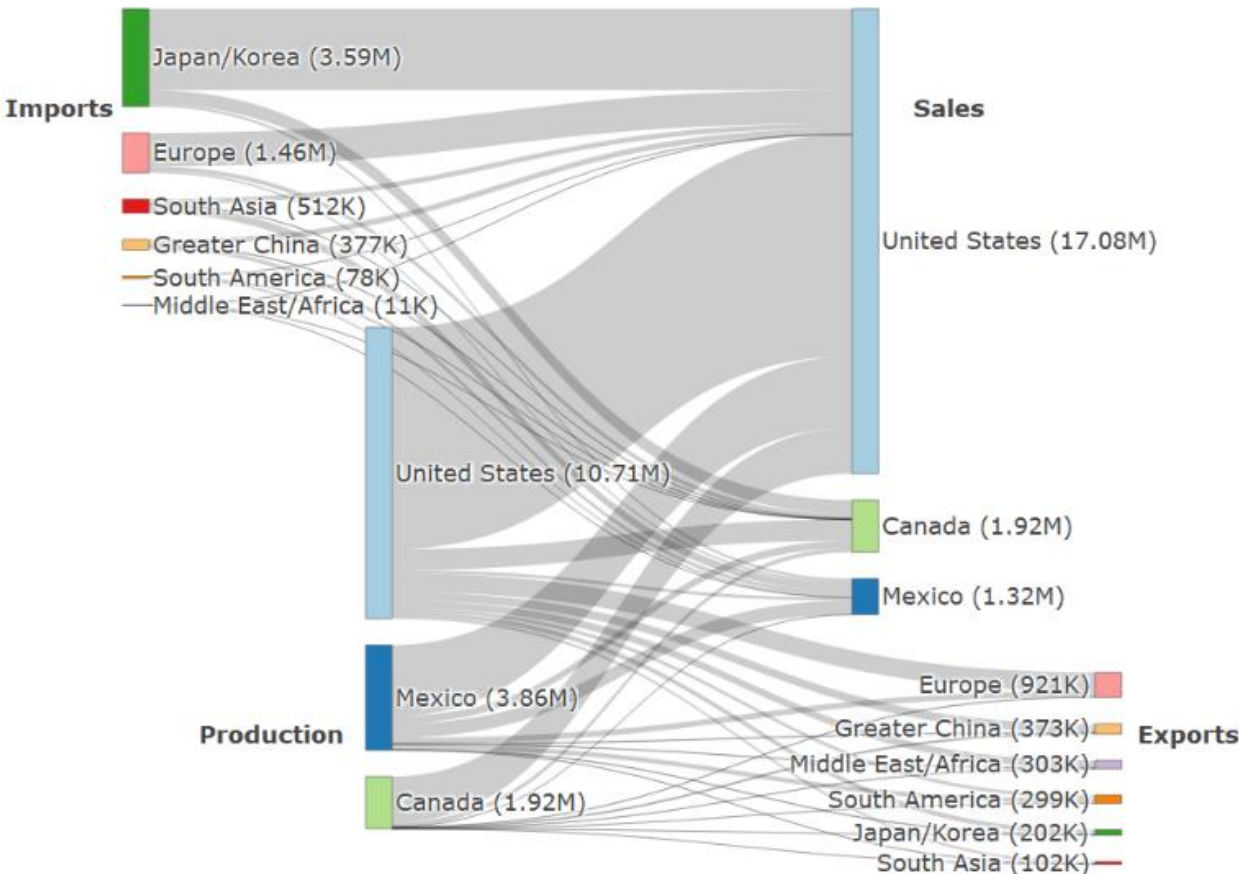
2035 LDV & EV Demand (57M) trade ratio LDV

Production and flows

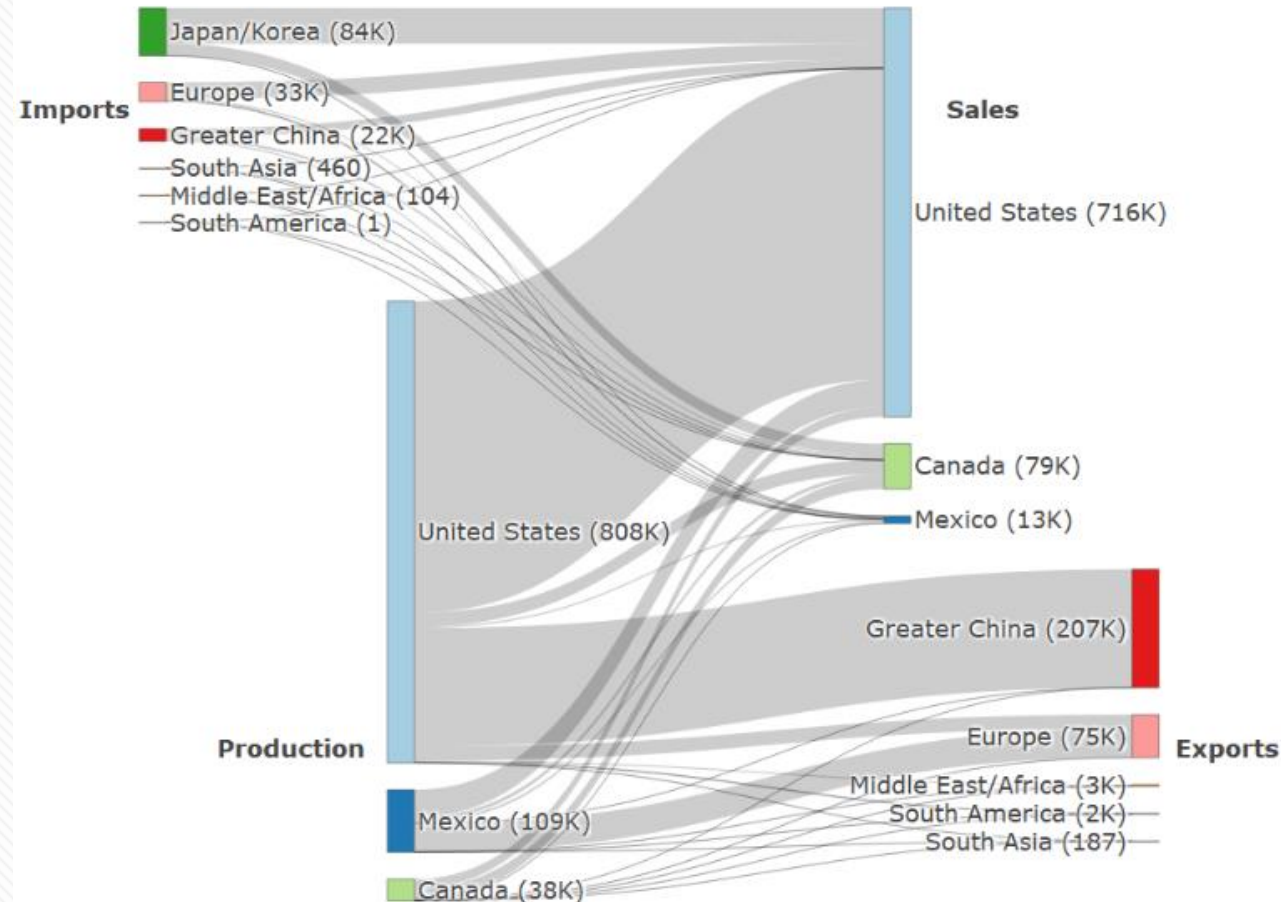
All Light Duty

Electric Light Duty

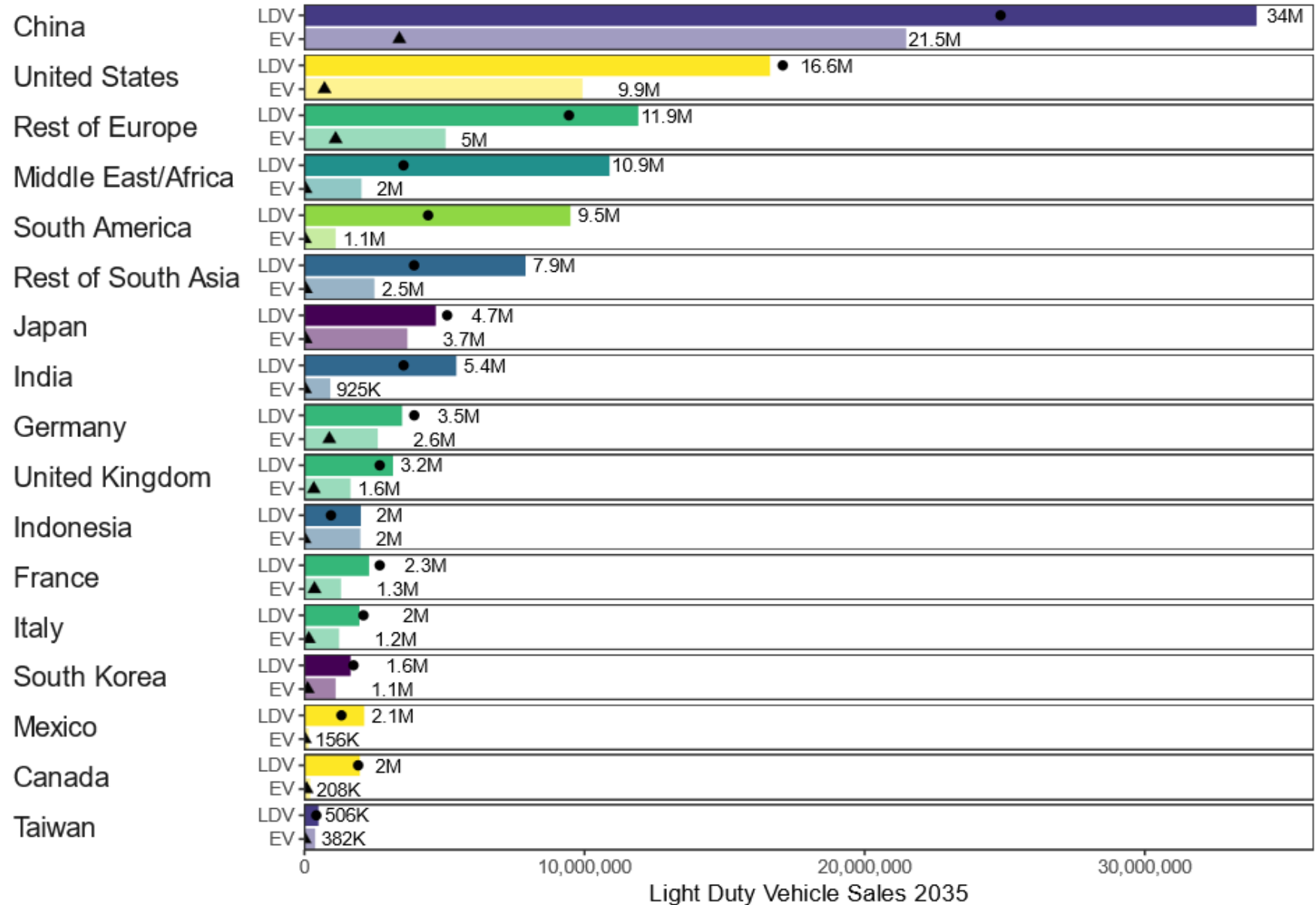
North America Light Duty Vehicle 2019 flows.



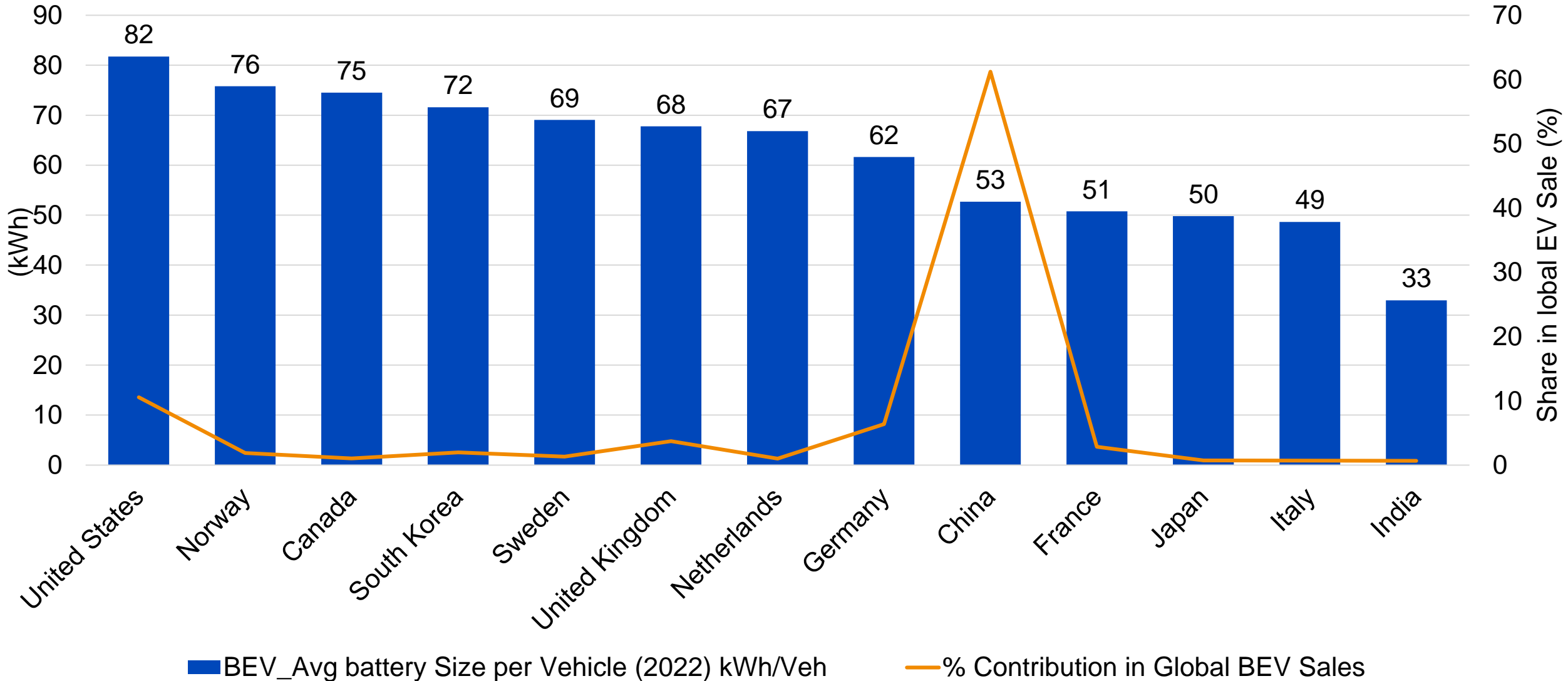
North America Light Duty EV 2021 flows.



Shifting Global Supply More Cars and More Electric



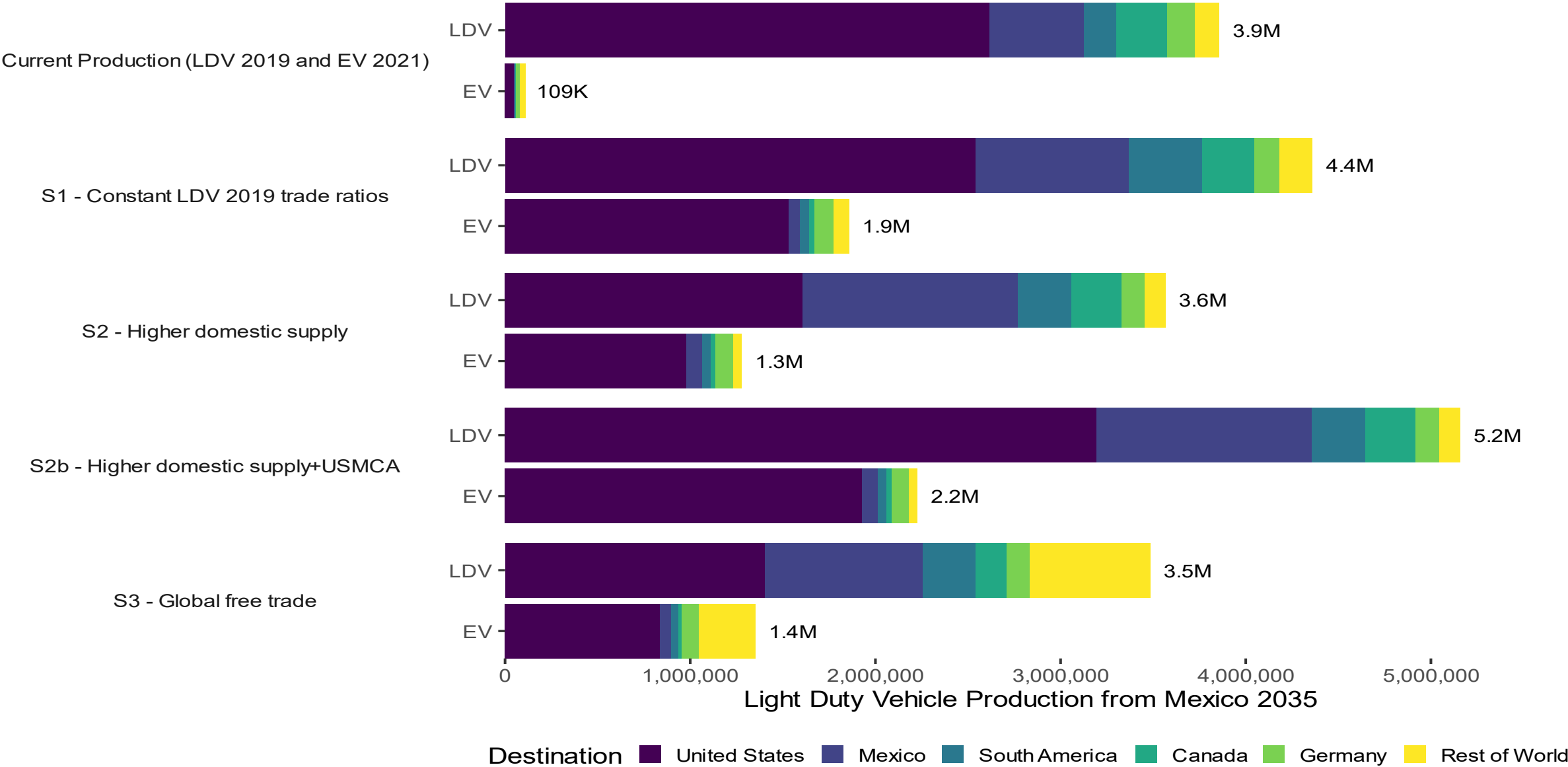
Average National BEV Battery capacity (kWh)



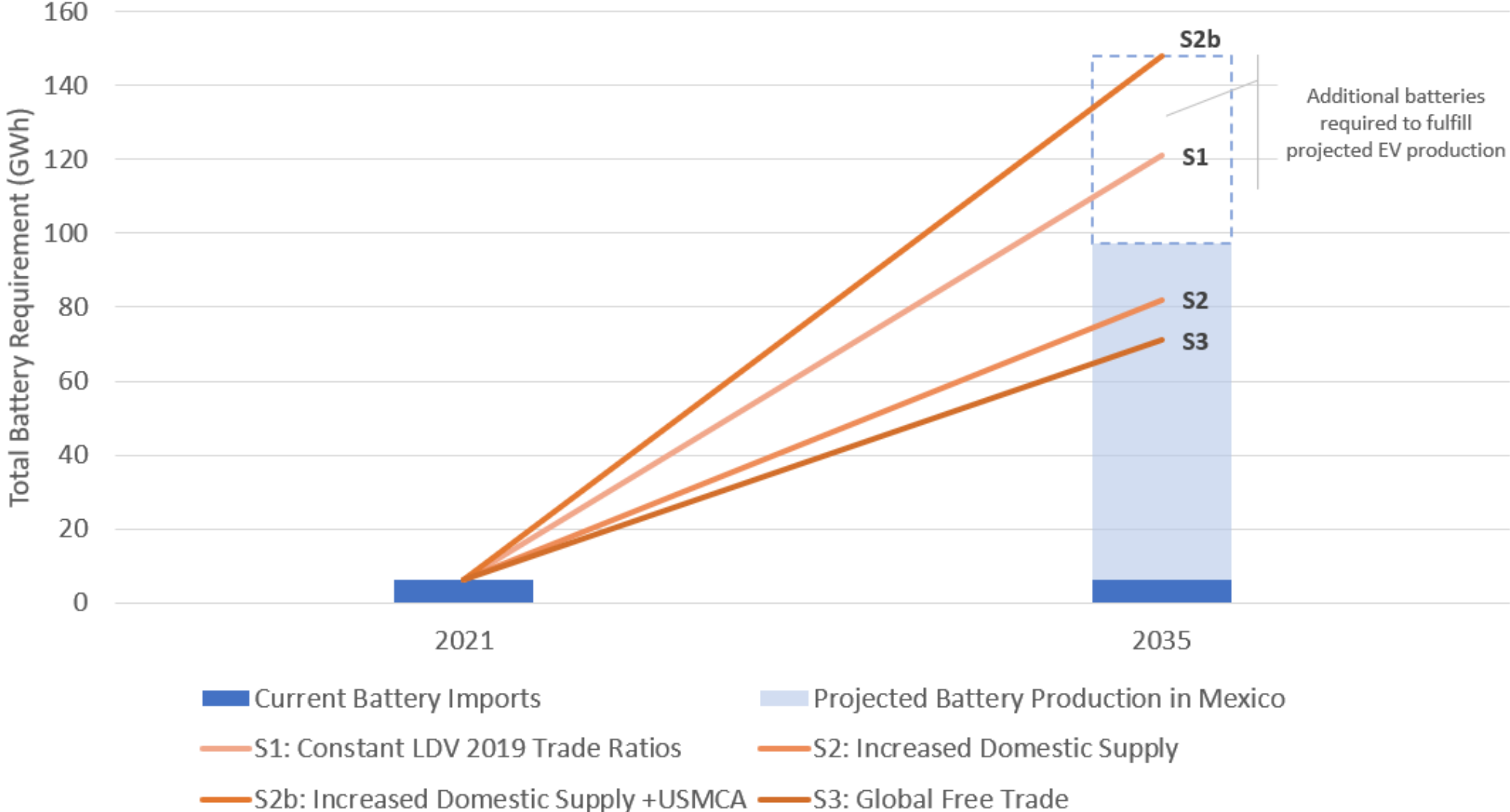
Scenarios for Production and Trade

- S1 - Constant LDV 2019 trade ratios
- S2 - Higher **Domestic** Supply
- S2b - Higher **domestic** supply + Free Trade **USMCA**
- S3 - Global **free trade** - Specialization in Production

Mexico's Light duty vehicle production in 2035



EV battery supply for production in Mexico and the requirement in 2035



Battery production in Mexico by 2035 is estimated from current production announcements by CATL, BMW, and Cenntro Automotive Mexico.

Total LDV growth can come from Developing Economies

Current Domestic Market and Production:

- Mexico's domestic market for light-duty vehicles is 1.32 million per year, with production at 3.86 million per year.
- Most production is exported to the US, where the light-duty vehicle market is saturated with sales remaining stable.

Expected Growth in Developing Markets:

- Developing countries such as Africa, South America, South Asia are poised to experience significant growth in their light-duty vehicle markets.
- Mexico's higher population growth rate and low vehicle ownership is expected to drive a 62% growth in its light-duty vehicle market by 2035.

EV Market growth is very much depending on the US market

Incentivizing North American EV Exports

- The Mexican automotive industry could have an advantage in the global shift to EVs by incentivizing North American-made parts and provisions established by the Biden administration in the 2022 Inflation Reduction Act.

This cements Mexico as the most strategic investment location for foreign automakers to access the massive North American Market.

Dependence on the US Market

- Mexico's heavy dependence on the US market could hinder its ability to compete globally in an open market scenario.
- Diversifying OEMs represented in Mexico and promoting new EV-only OEMs may help reduce dependency and create a more stable industry (post 2035?)

Questions?

Next Steps:

- Further modeling of the demand for batteries and minerals.
- Refining scenarios by interviewing industry experts and considering additional factors such as labor and transportation.
- Expansion of analysis to include the demand from medium and heavy-duty vehicles, as well as electric transit.
- Consideration of the entire supply chain, including tier 1-3 suppliers, and focus on labor implications.

Gil Tal

gtal@ucdavis.edu