

US EV Automotive Outlook and USMCA Adjustment

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Regional Economic Models, Inc.

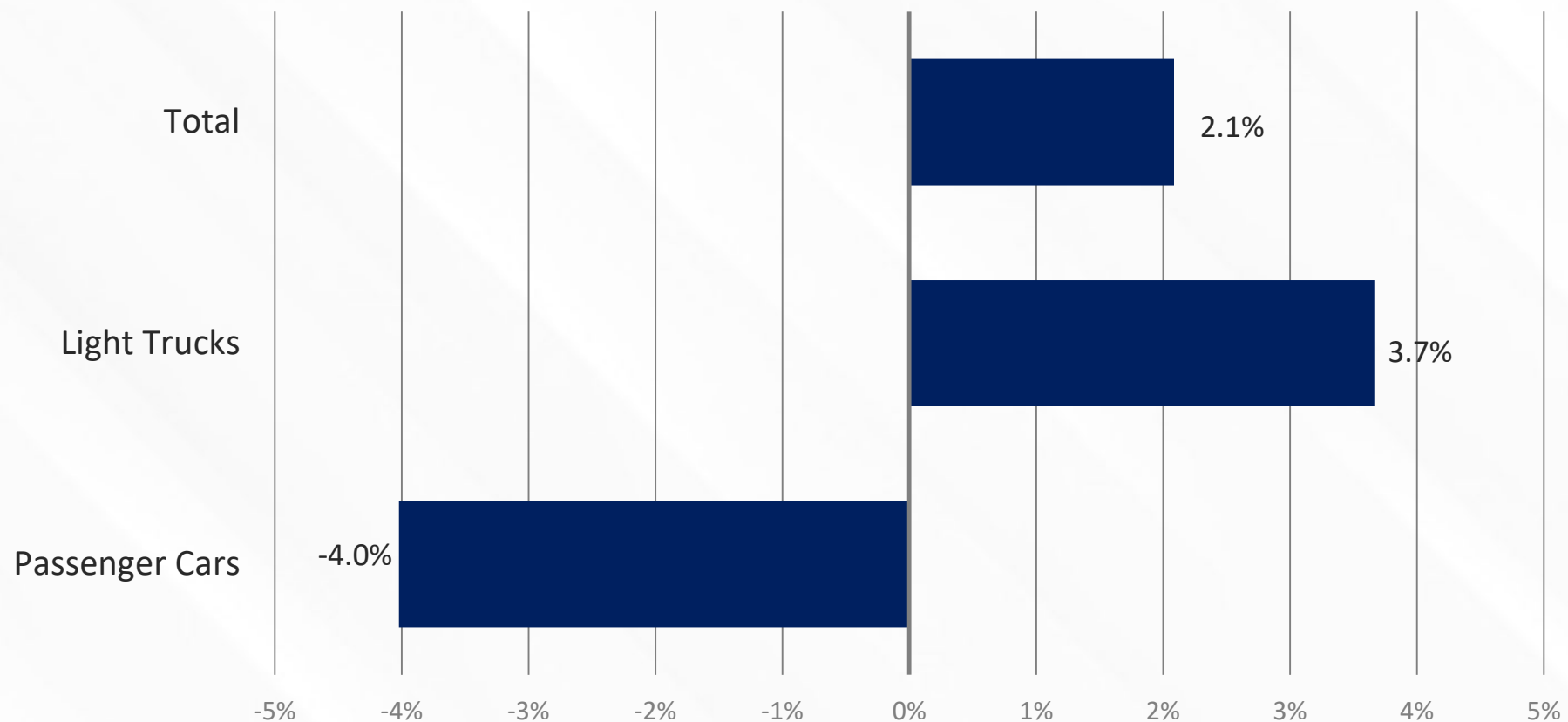
Industry Update: Sales & Production

2024 YTD sales were up to 2.1%



U.S. Light Vehicle Sales

Percent Change (YTD) through June: 2024 vs. 2023



7,810,162	Total
159,654	
100%	

6,303,790	Truck
222,789	
80.7%	

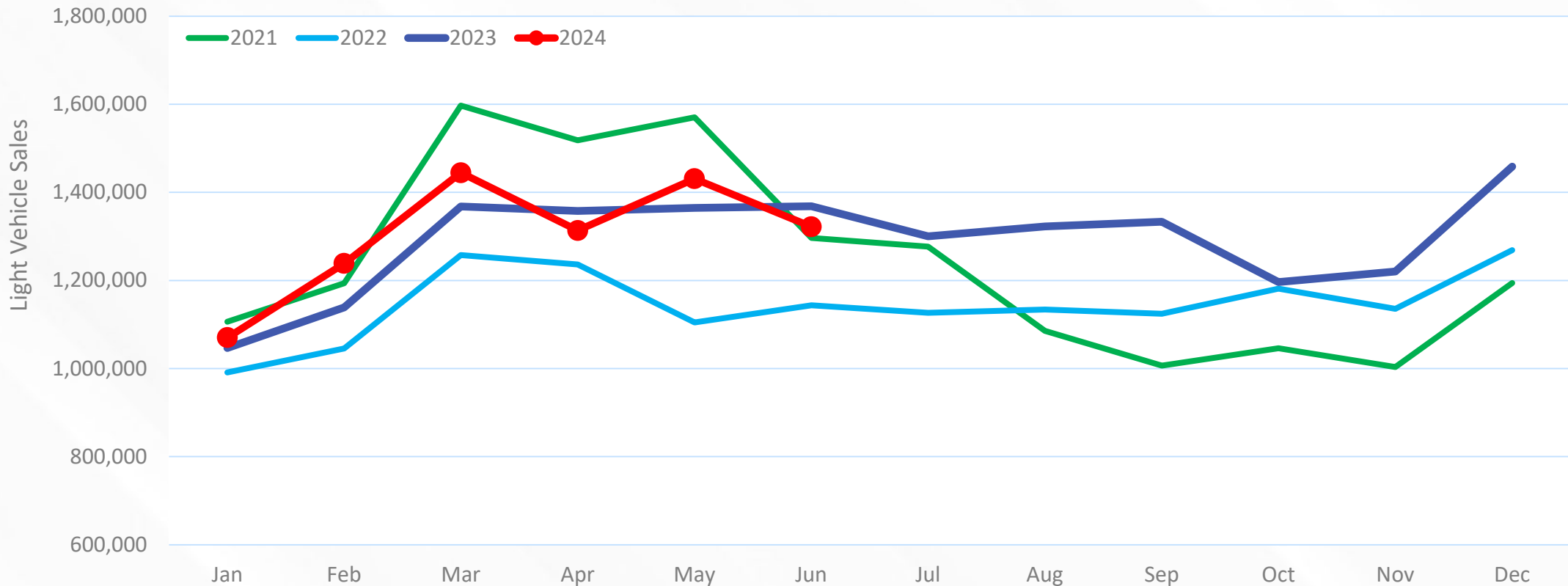
1,506,372	Cars
-63,135	
19.3%	

U.S. auto sales in June declined to 1.3 million units: down 3.4% from the same month last year



U.S. Light Vehicle Monthly Sales

January 2021 – June 2024



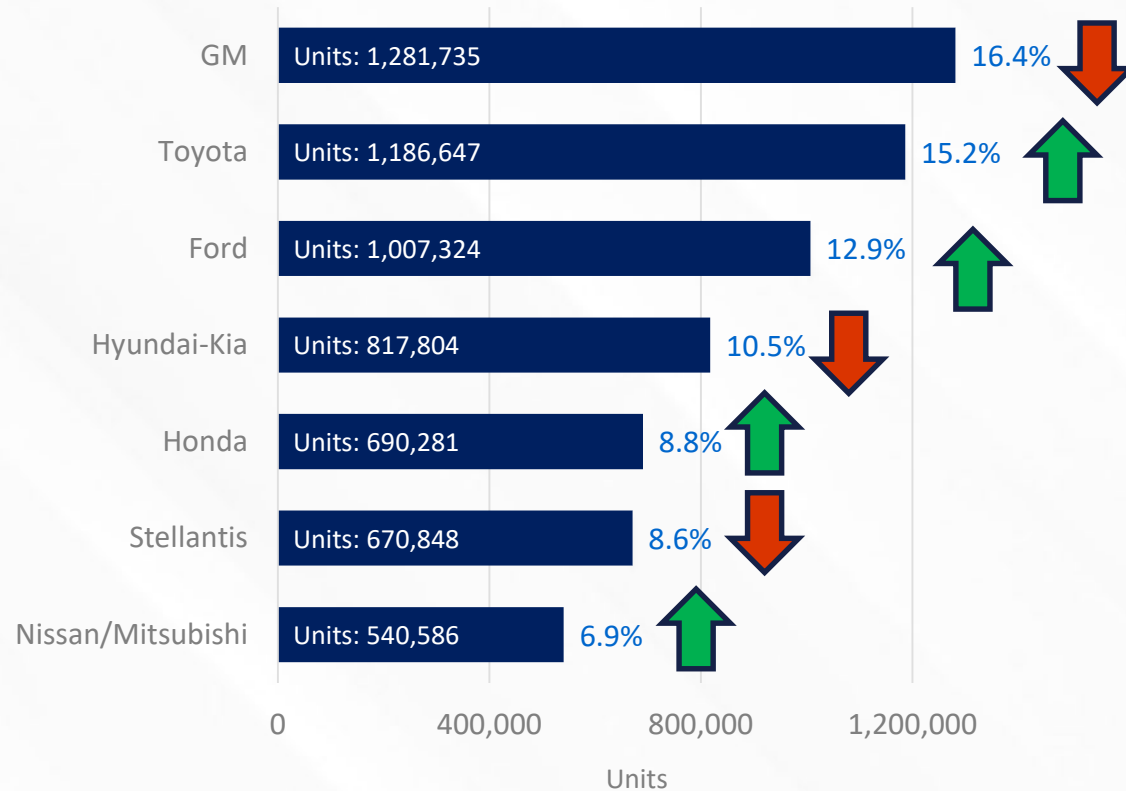
what does **REMI** say?sm Source: Wards Intelligence; CAR Research

Japanese automakers gained 2.2 percentage points of market shares



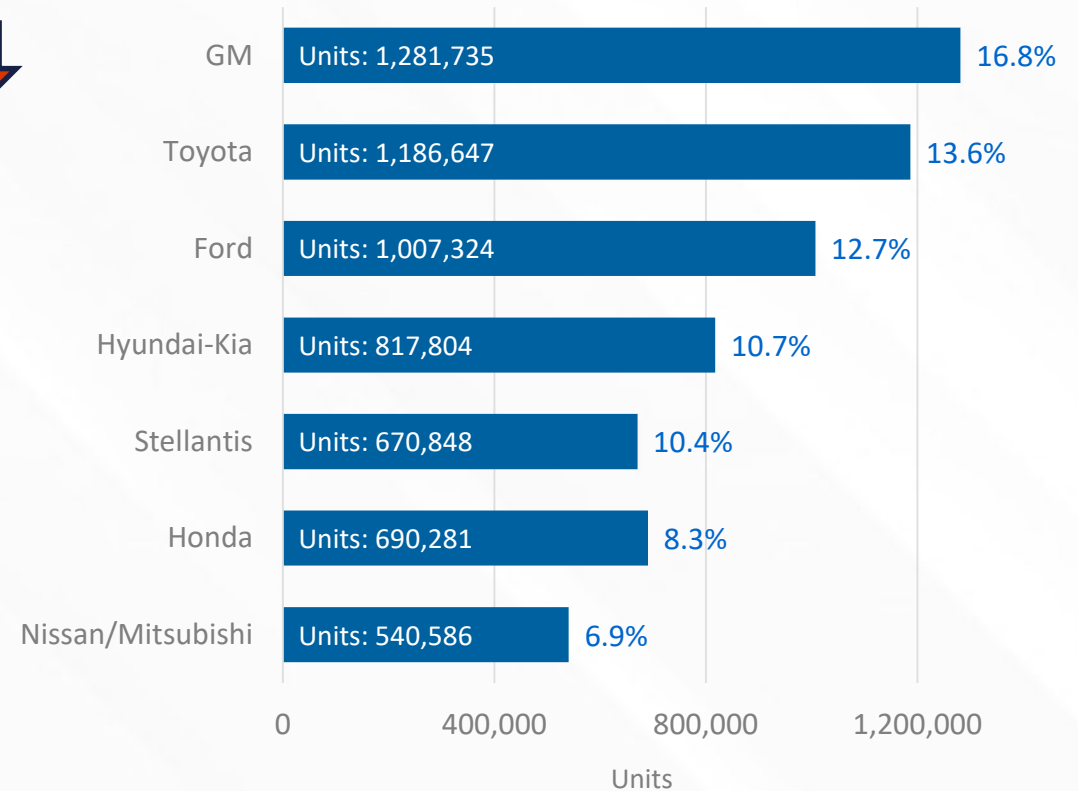
U.S. Market Share 2024

YTD through June 2024



U.S. Market Share 2023

YTD through June 2023

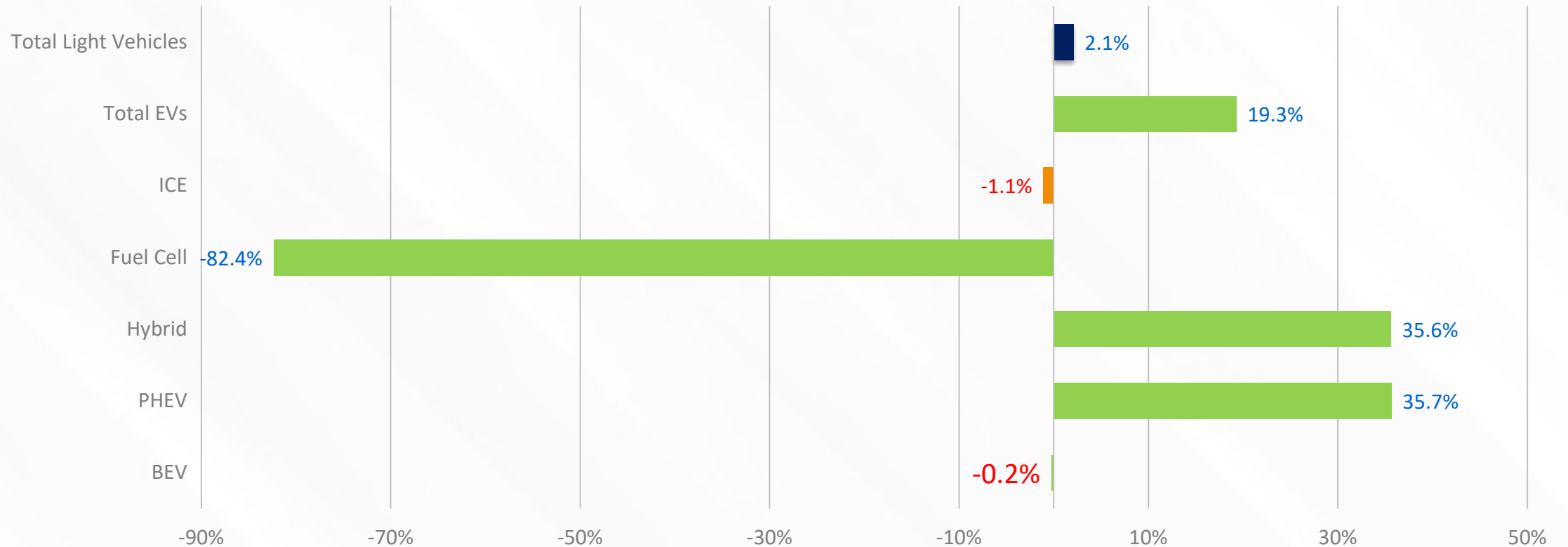


BEV sales declined by 0.2%



Segment Breakdown: U.S. Light Vehicles Sales Percent Change

2024 YTD vs. 2023 YTD through June



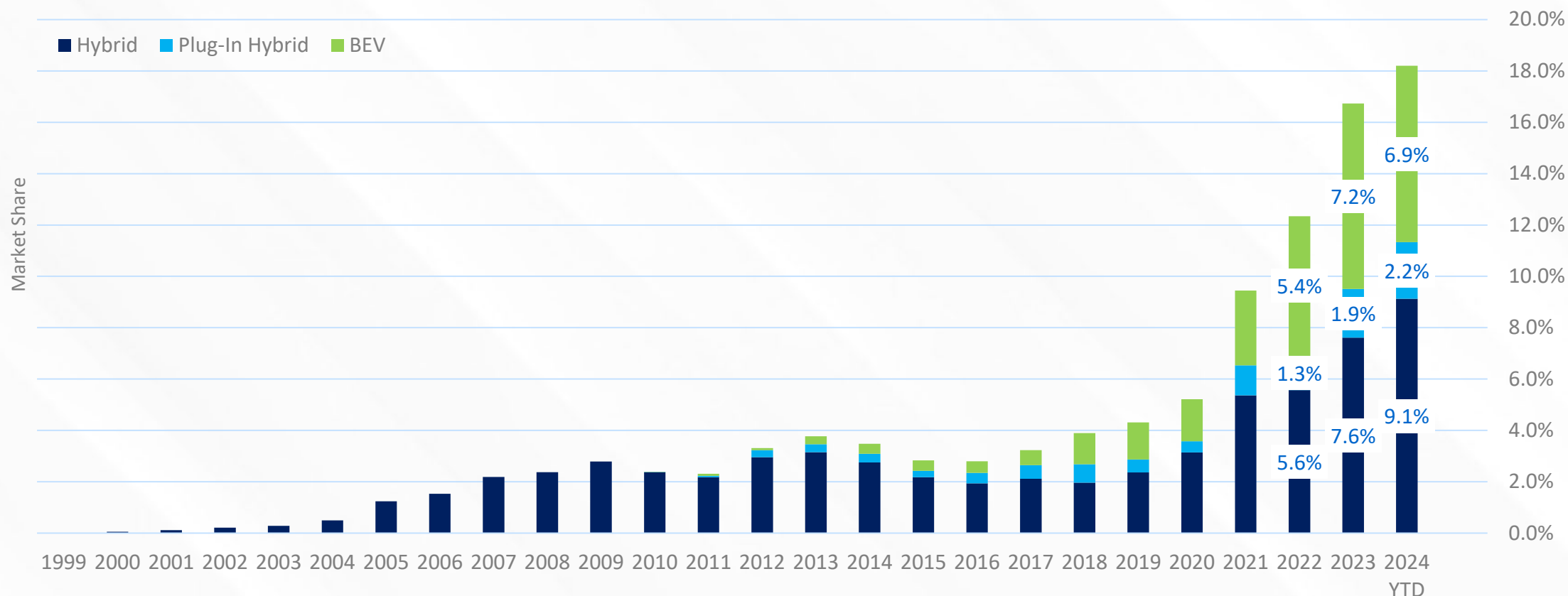
what does REMI say?sm Source: Wards Intelligence; CAR Research

Hybrid and Plug-In Hybrid grew rapidly from last year; BEV growth trailed behind



U.S. Electrified Light Vehicle Sales by Propulsion Technologies

1999 – 2024 YTD



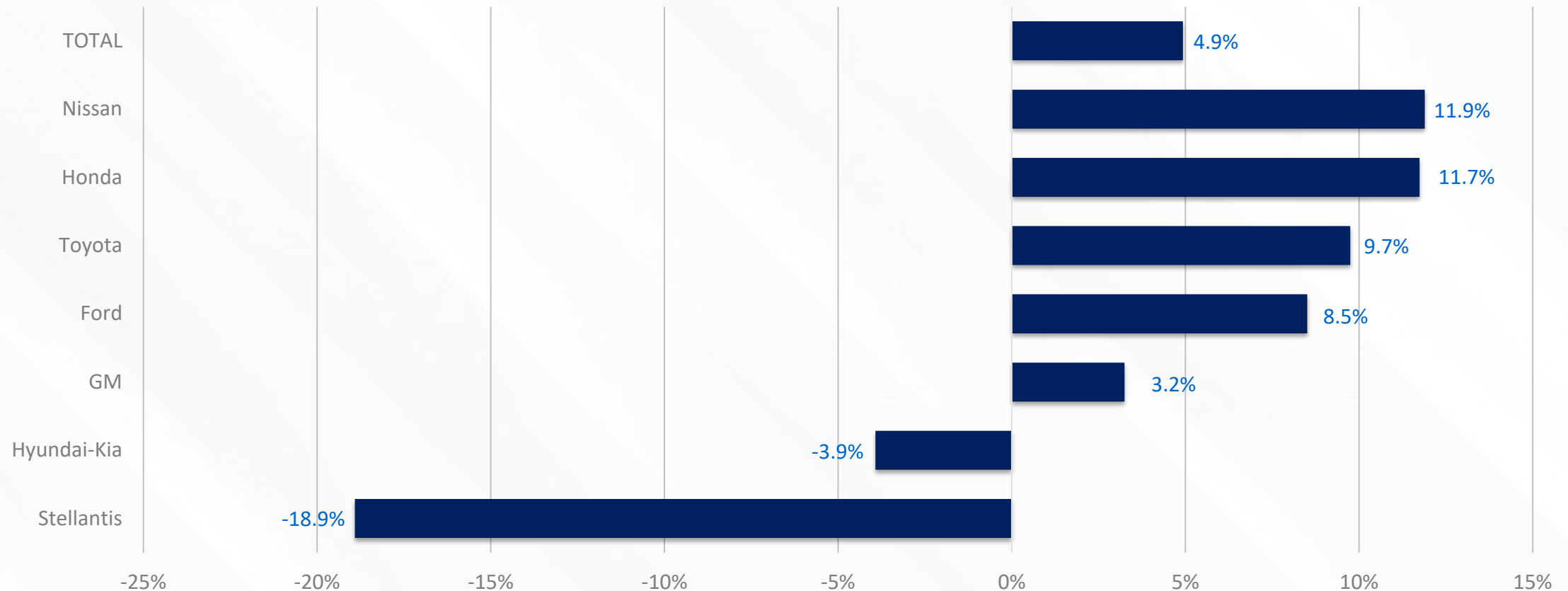
what does **REMI** say? sm Source: Wards Intelligence; CAR Research

Stellantis North America still suffered production losses due to plant closures



N.A. Vehicle Production Percent Change

YTD Through May: 2024 vs. 2023



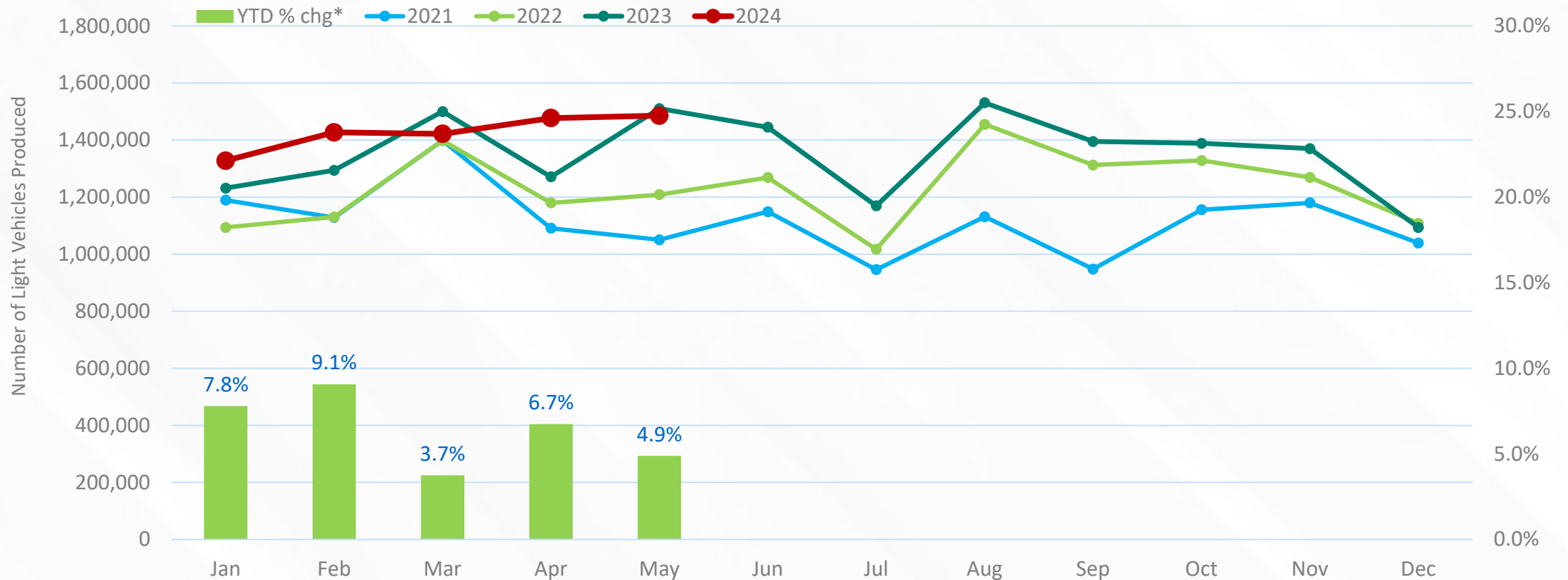
what does REMI say?sm Source: Wards Intelligence; CAR Research

N.A. year-to-date production increases by 4.9 percent



North America Monthly Vehicle Production

2020 – 2024 YTD



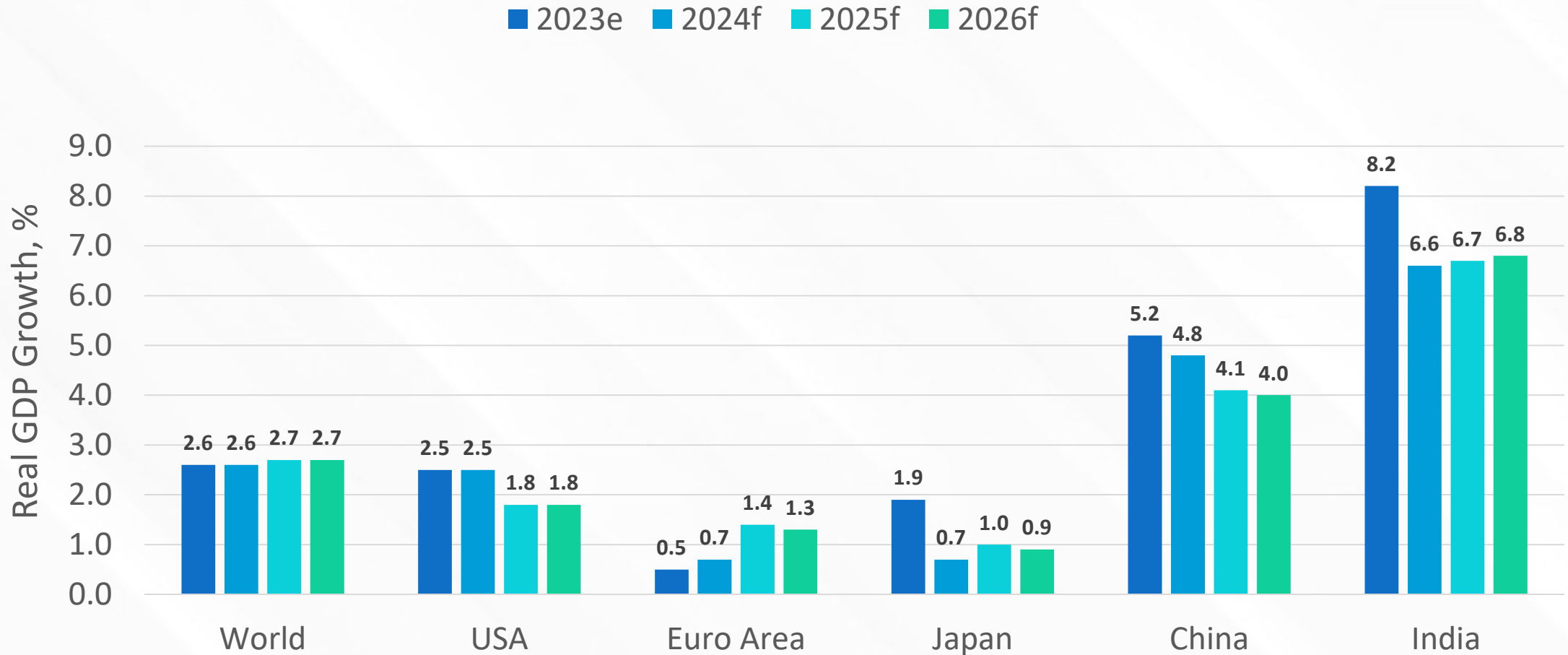
what does **REMI** say? sm Source: Wards Intelligence; CAR Research

Industry Update: Economic Outlook

World Real GDP Growth Projection



2023e – 2026f

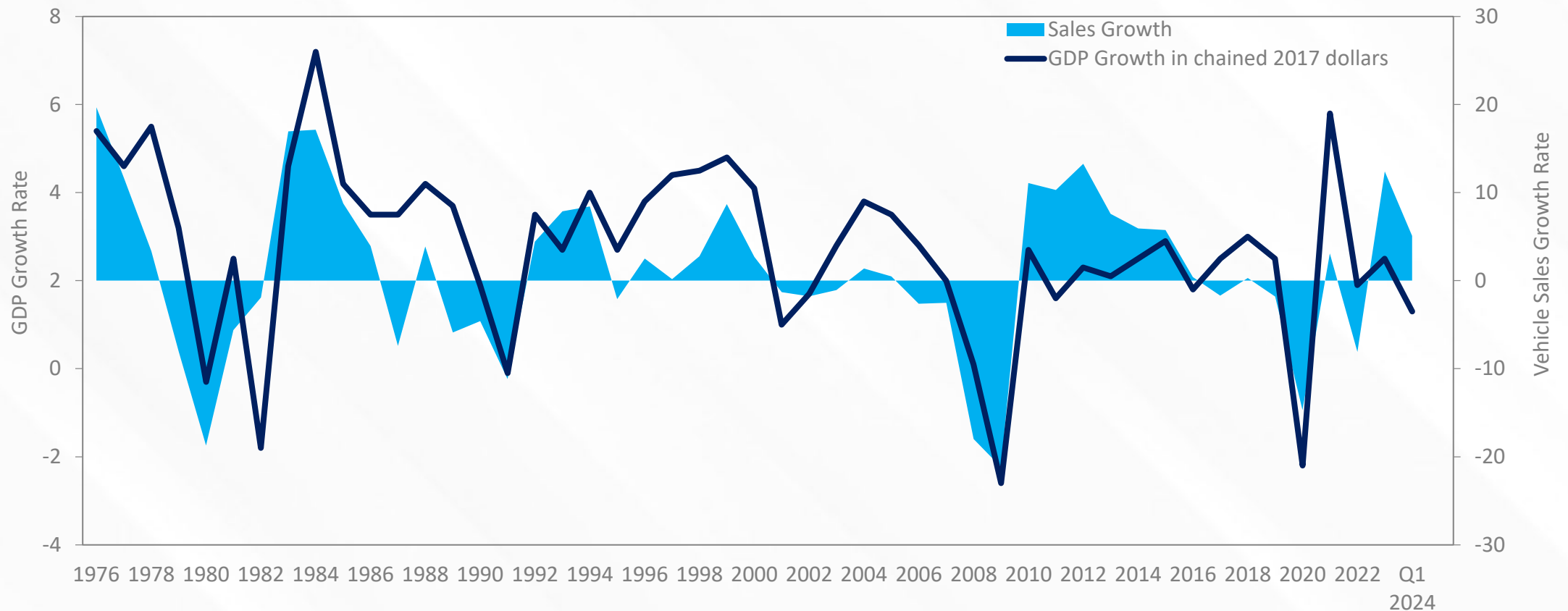


Need 2% GDP growth to have vehicle sales growth



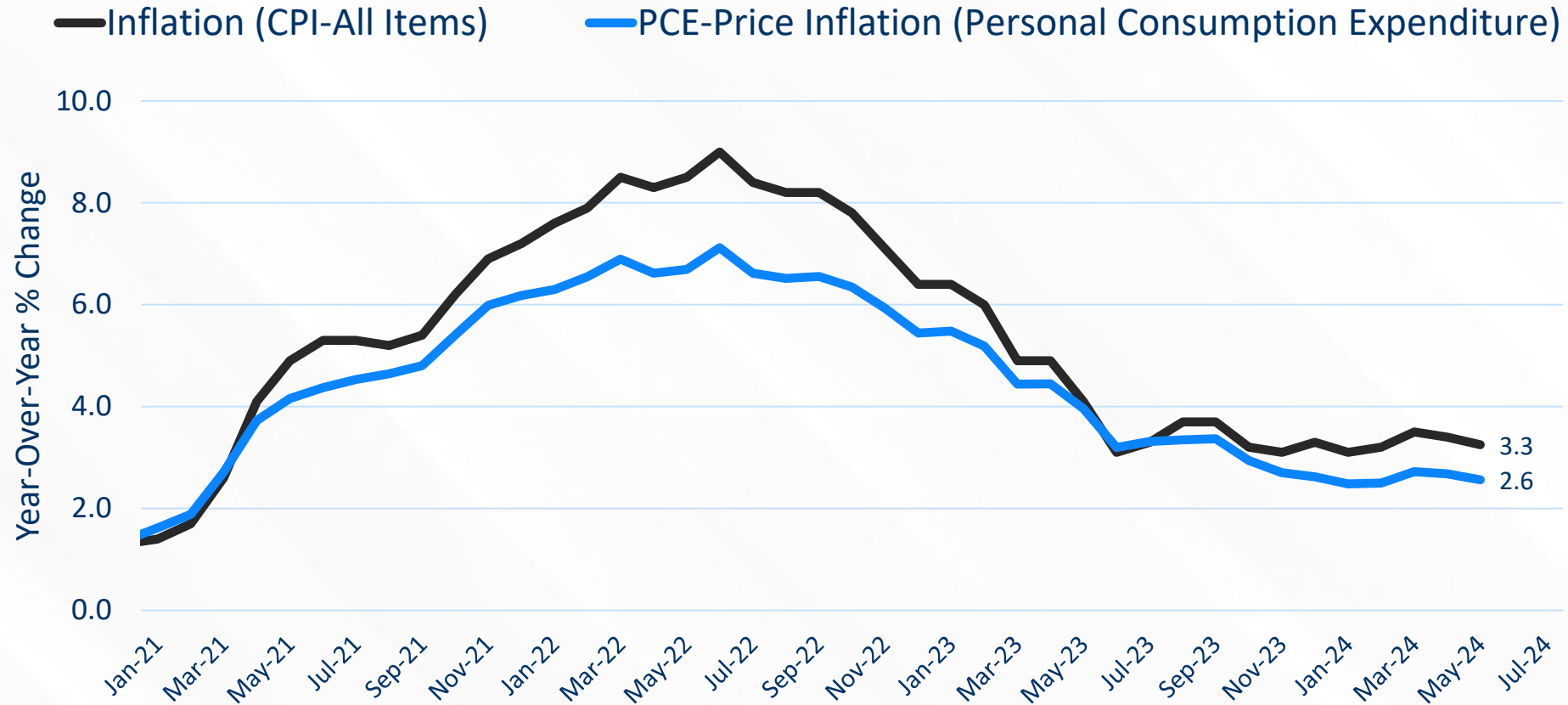
U.S. GDP Growth Rate and Vehicle Sales Correlation

1976 – 1Q 2024



what does **REMI** say? sm Source: Bureau of Economic Analysis

Price Inflation has come down to 2021 levels



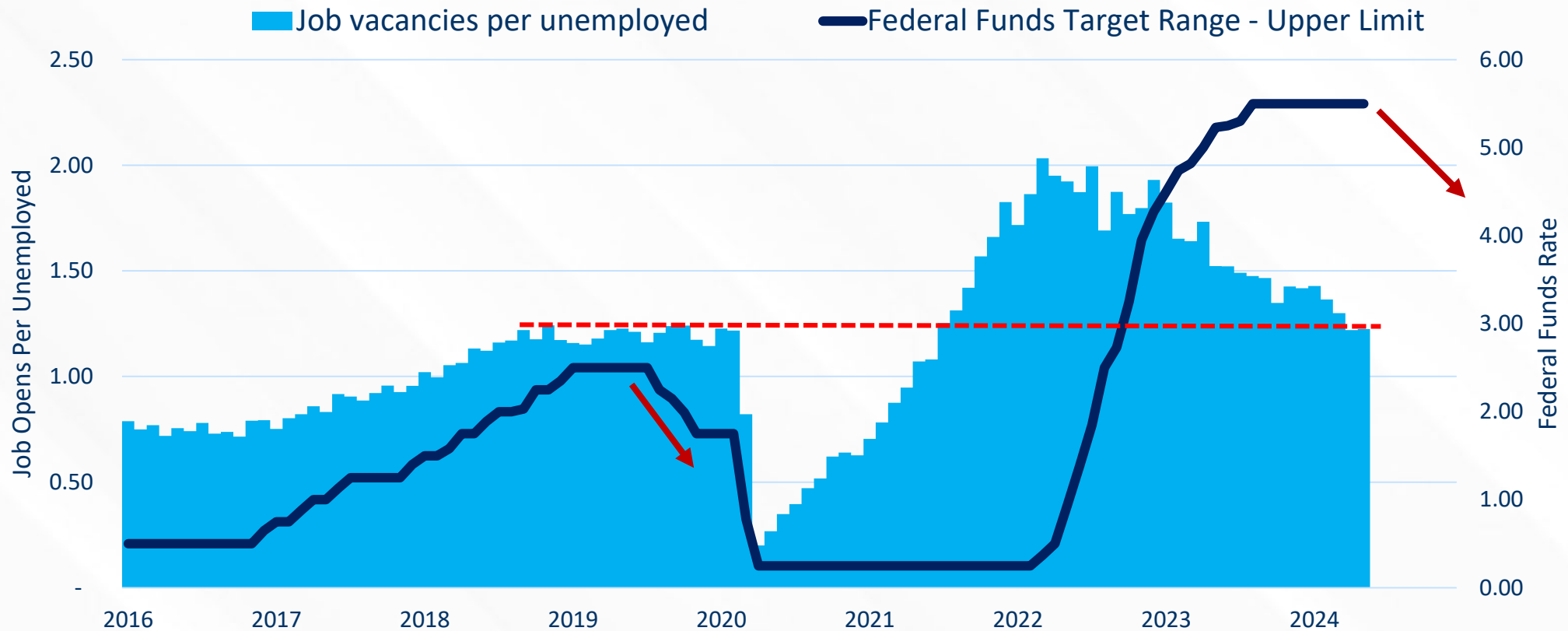
what does **REMI** say? sm

Source: Bureau of Labor Statistics; Bureau of Economic Analysis

Job vacancies per unemployed have declined to pre-pandemic level



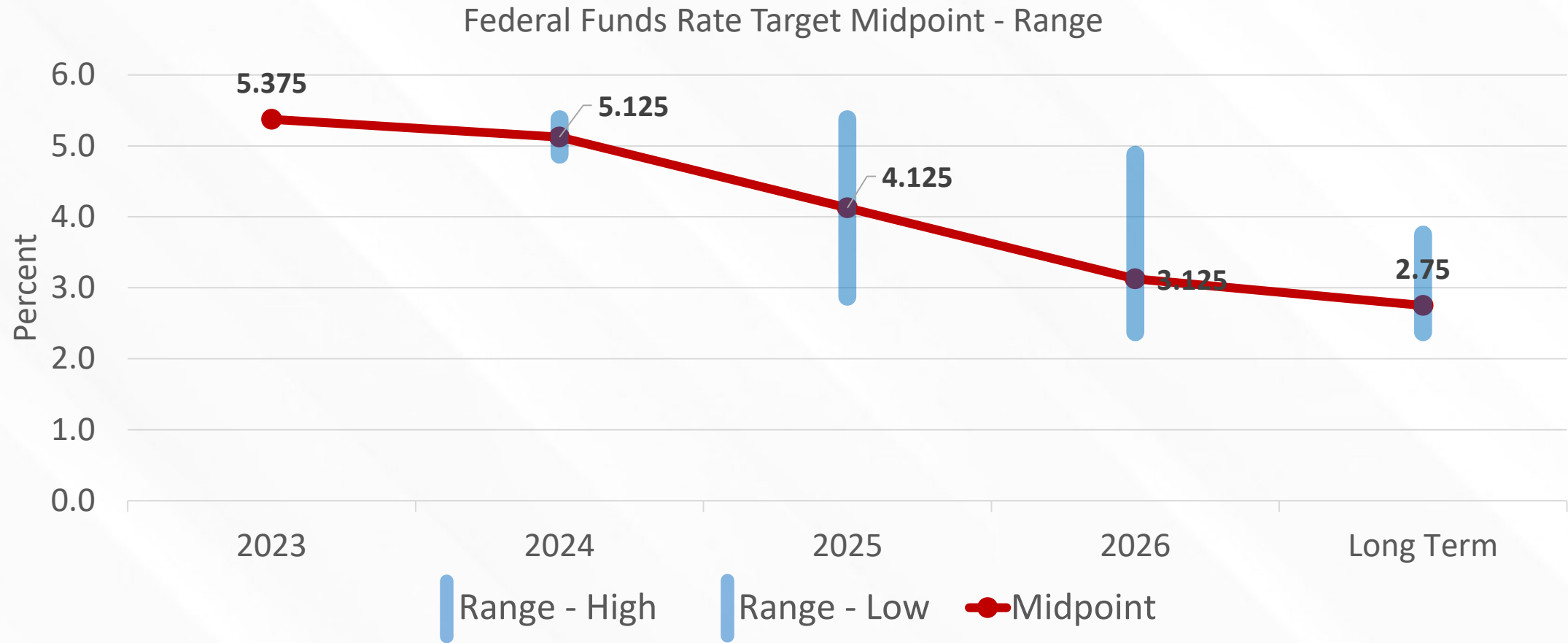
2016 – 2024 YTD (Through May)



FOMC Participants' Federal Funds Rate Target (Midpoint – Range)



June 2024



what does **REMI** say?sm

Source: Bureau of Economic Analysis

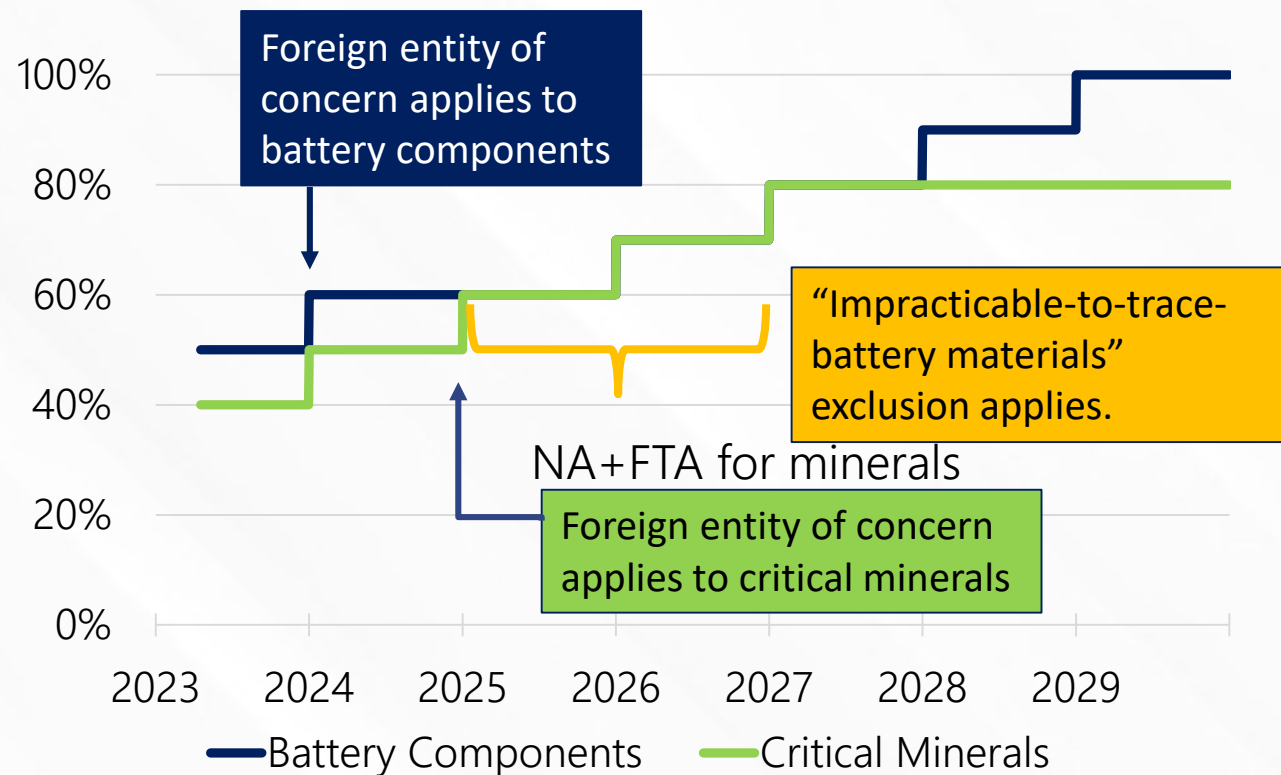
30D Clean Vehicle Credit





- Foreign Entity of Concern
- Battery Component Requirement
- Critical Minerals Requirement

Clean New Vehicle Credit: Sourcing and MSRP requirements



Share of NA Value



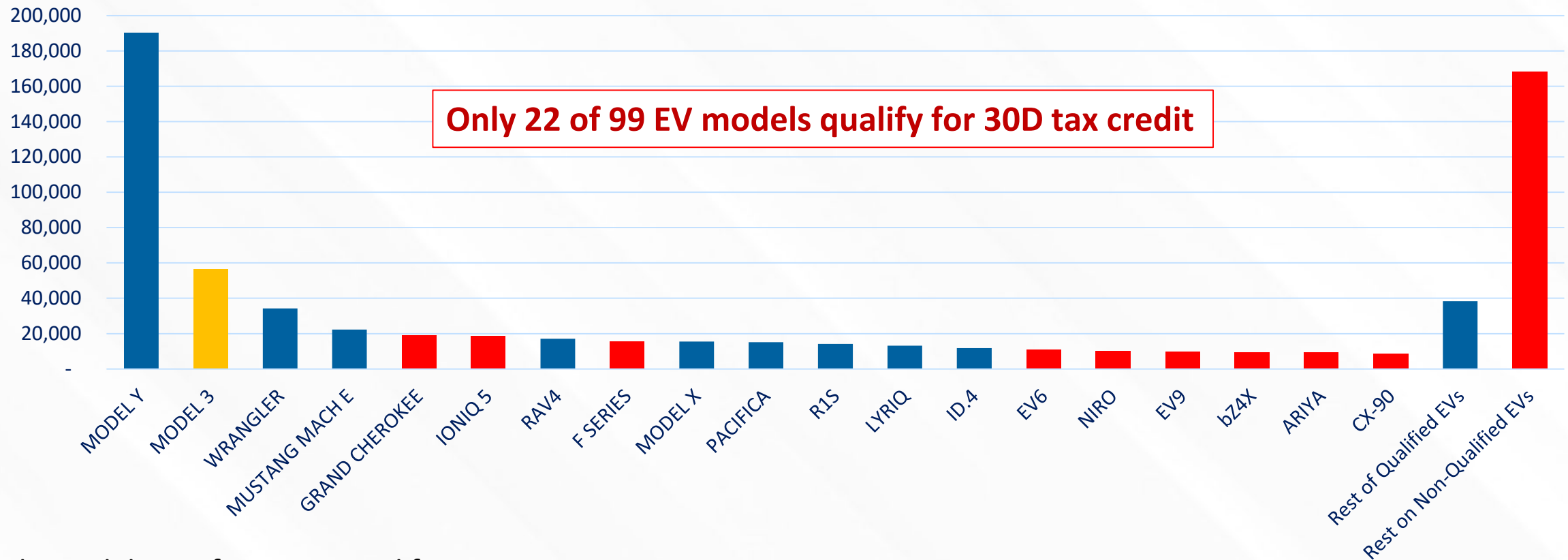
Vehicle Type	MSRP Cap
 Van	<\$80,000
 Sport Utility Vehicles	<\$80,000
 Truck	<\$80,000
 Passenger Vehicles	<\$55,000

what does **REMI** say?sm

52 Percent of EVs Sold in the U.S. qualified for 30D Clean Vehicle Credit



EV Sales by Models, 2024 YTD



*Only Model 3 Performance qualifies.

EV: BEVS, PHEVs, and FCEVs

what does REMI say?sm Source: Fueleconomy.gov, Wards Intelligence

Foreign Entity of Concern (FEOC)



42 U.S. Code § 18741 (a)(5)

Foreign entity of concern The term “foreign entity of concern” means a foreign entity that is— (A) designated as a foreign terrorist organization by the Secretary of State under section 1189(a) of title 8 ; (B) included on the list of specially designated nationals and blocked persons maintained by the Office of Foreign Assets Control of the Department of the Treasury (commonly known as the “SDN list”); **(C) owned by, controlled by, or subject to the jurisdiction or direction of a government of a foreign country that is a covered nation (China, Russian, North Korea, Iran);** (D) alleged by the Attorney General to have been involved in activities for which a conviction was obtained under— (i) chapter 37 of title 18 (commonly known as the “Espionage Act”); (ii) section 951 or 1030 of title 18; (iii) chapter 90 of title 18 (commonly known as the “Economic Espionage Act of 1996”); (iv) the Arms Export Control Act (22 U.S.C. 2751 et seq.); (v) section 224, 225, 226, 227, or 236 of the Atomic Energy Act of 1954 (42 U.S.C. 2274 , 2275, 2276, 2277, and 2284); (vi) the Export Control Reform Act of 2018 (50 U.S.C. 4801 et seq.); or (vii) the International Emergency Economic Powers Act (50 U.S.C. 1701 et seq.); or (E) determined by the Secretary, in consultation with the Secretary of Defense and the Director of National Intelligence, to be engaged in **unauthorized conduct** that is detrimental to the national security or foreign policy of the United States.

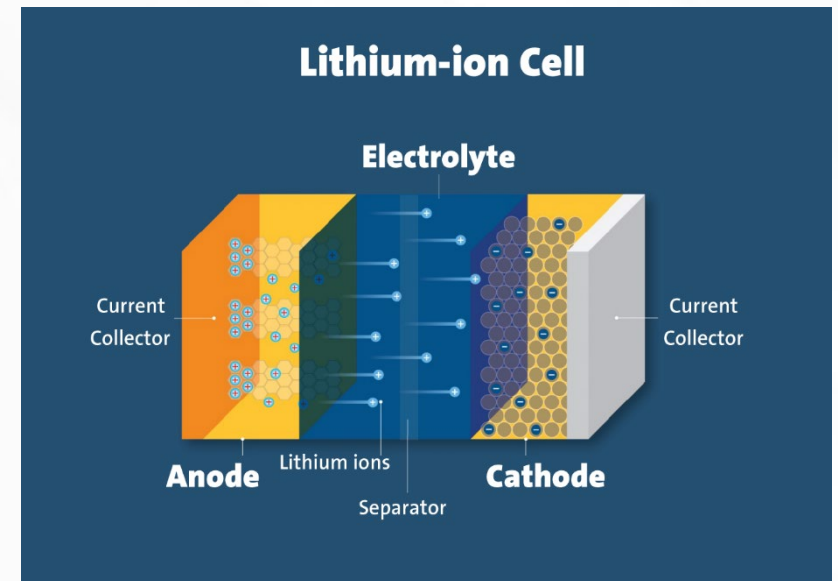
Foreign Entity of Concern (FEOC)



- **Foreign Entity:**
 - a. A government of a foreign country – includes senior foreign political figures
 - b. Non-U.S. citizen/permanent resident
 - c. Foreign corporation/organization
 - d. A U.S. entity **owned by, controlled by, or subject to the direction of** an entity that qualifies as above a., b., and c.
- **“Owned by, controlled by, or subject to the direction of”**
 - An entity incorporated in, headquartered in, or performing the relevant activities in a covered nation
 - A combined 25% or more of the entity’s board seats, voting rights, or equity interest cumulatively held by a government entity of a covered nation
 - Licensing/contractual agreements may be deemed control

Battery Component - Definition

- A component that forms part of a clean vehicle battery and that is **manufactured or assembled** from one or more components or battery materials that are combined through industrial, chemical, and physical assembly steps.
- Examples:
 - Cathode electrode, anode electrode
 - Solid metal electrode
 - Coated separator
 - Liquid electrolyte, solid-state electrolyte
 - Battery cell
 - Battery module



Battery Materials - Definition



- Direct and indirect inputs to battery components that are produced **through processing** rather than through manufacturing or assembly.
- **“Through Processing”** – Extracted, Processed, or Recycled
- **Categories:**
 - Applicable critical minerals
 - Constituent materials (battery materials that contain applicable critical minerals)
 - Battery materials without applicable critical minerals



Impracticable-To-Trace Battery Material



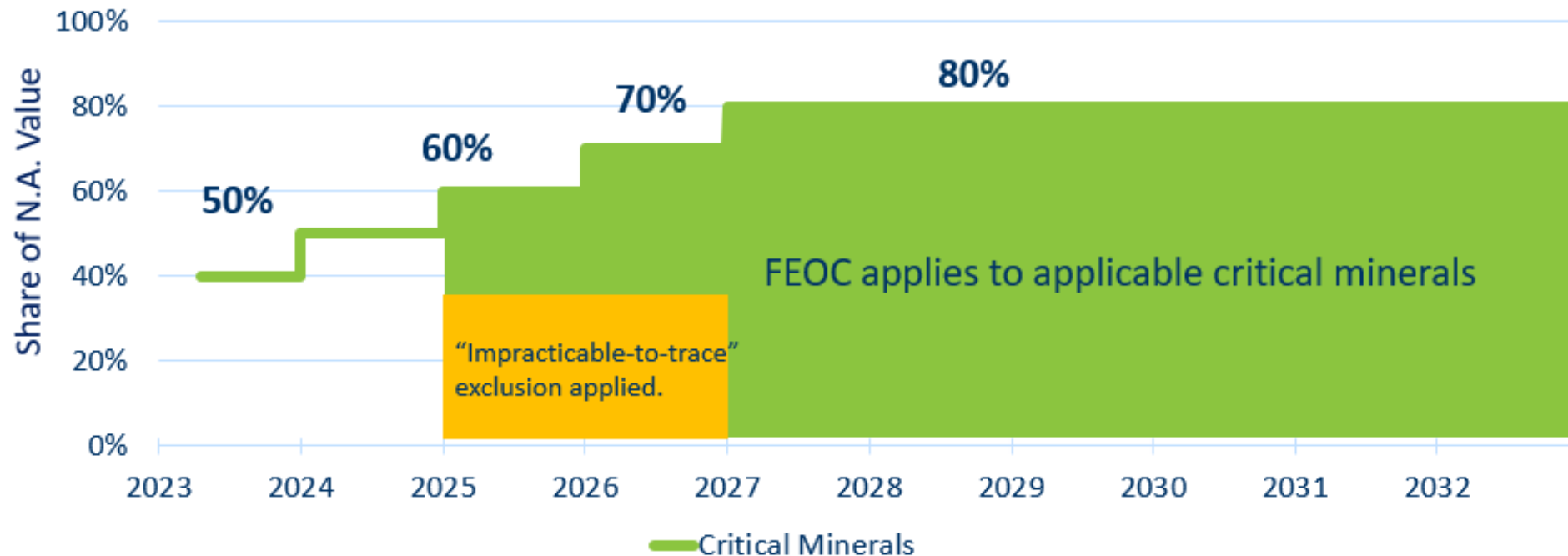
- Definition: applicable critical minerals in the following circumstances:
 - **Graphite** contained in anode materials
 - Applicable critical minerals contained in **electrolyte salts, electrolyte binders, or electrolyte additives.**



what does **REMI** say?sm

Picture source: U.S. Department of Energy; MSE Supplies

Share of Qualifying Critical Minerals Requirement

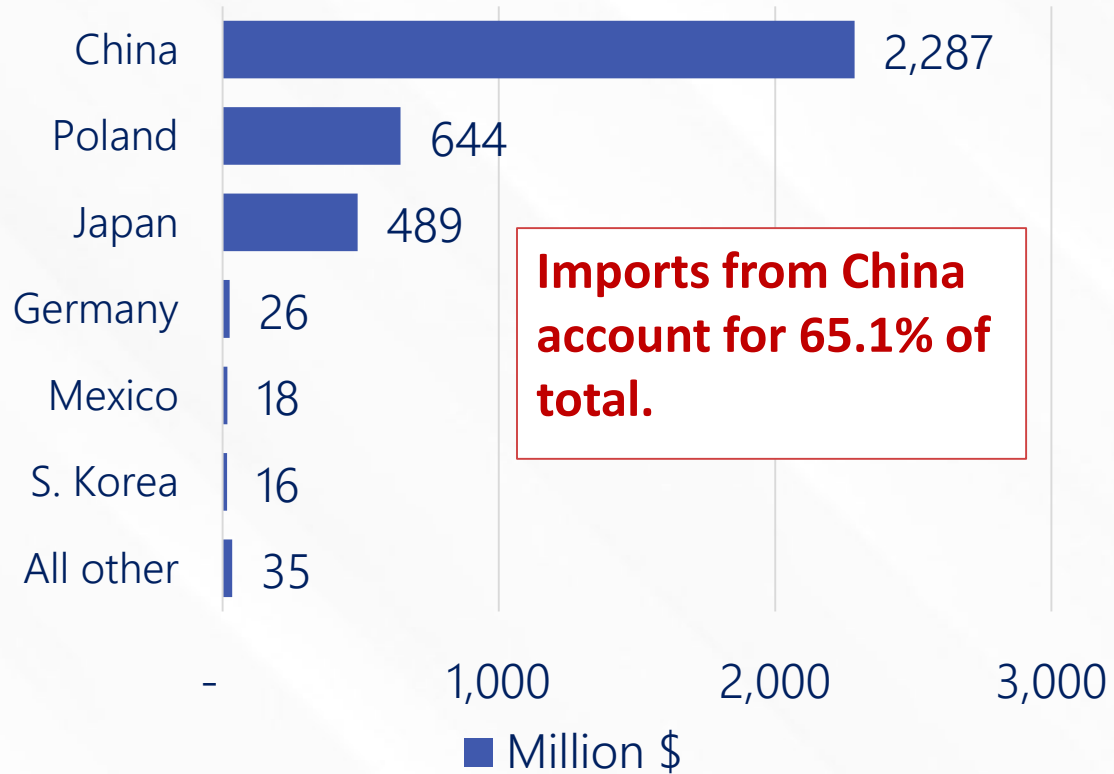


what does **REMI** say?sm

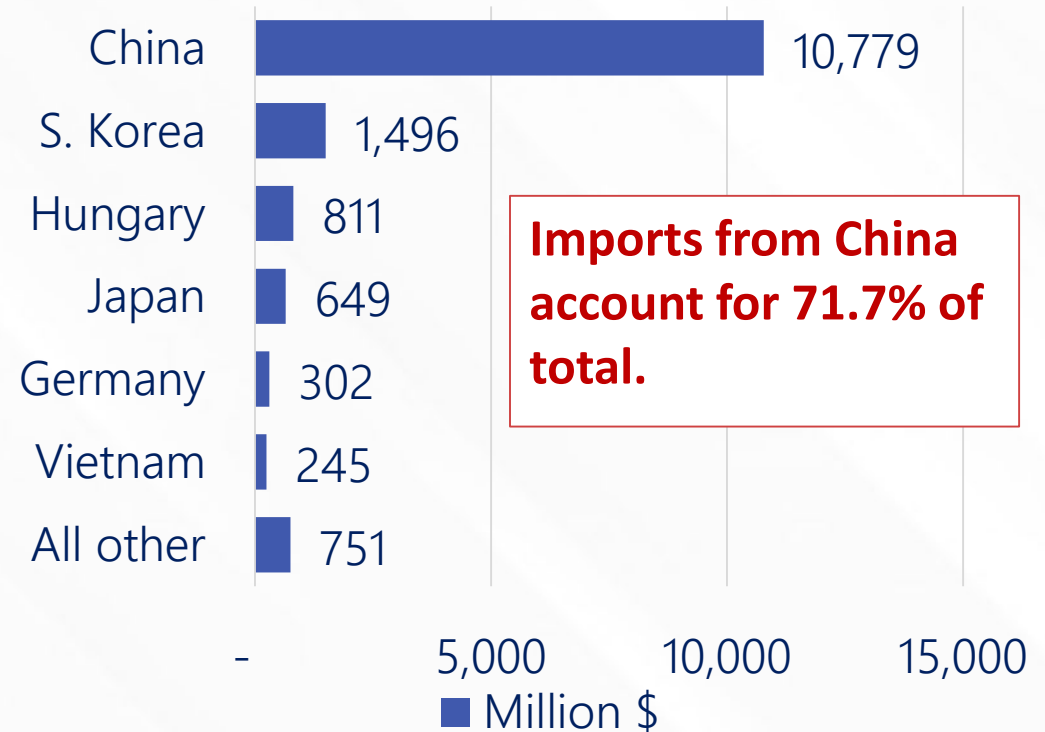
Imports of Lithium Batteries by Country of Origin, 2023



Imports of Lithium-Ion Batteries for EVs



Imports of Non-EV Lithium-Ion Batteries



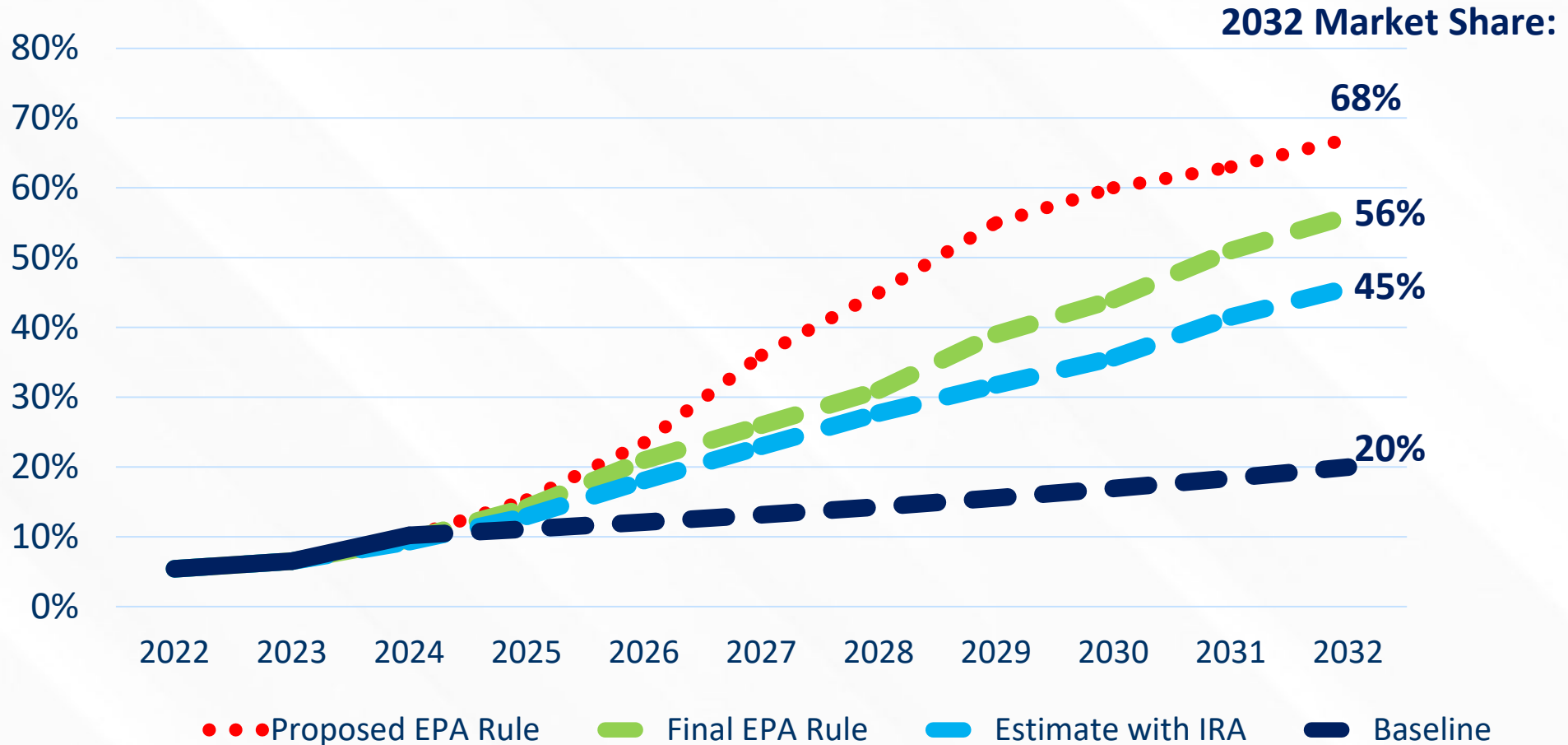
Batteries in HTS 8507600010, 8507600020

what does REMI say?sm Source: U.S. Census Bureau

U.S. BEV Market Share Projections



2022-2023 Actual; 2024 – 2032 Forecast



what does **REMI** say?sm

Assuming No Increase in Foreign Competition and Supporting Government Policy



Summary of Economic Impacts, in Fixed 2020\$

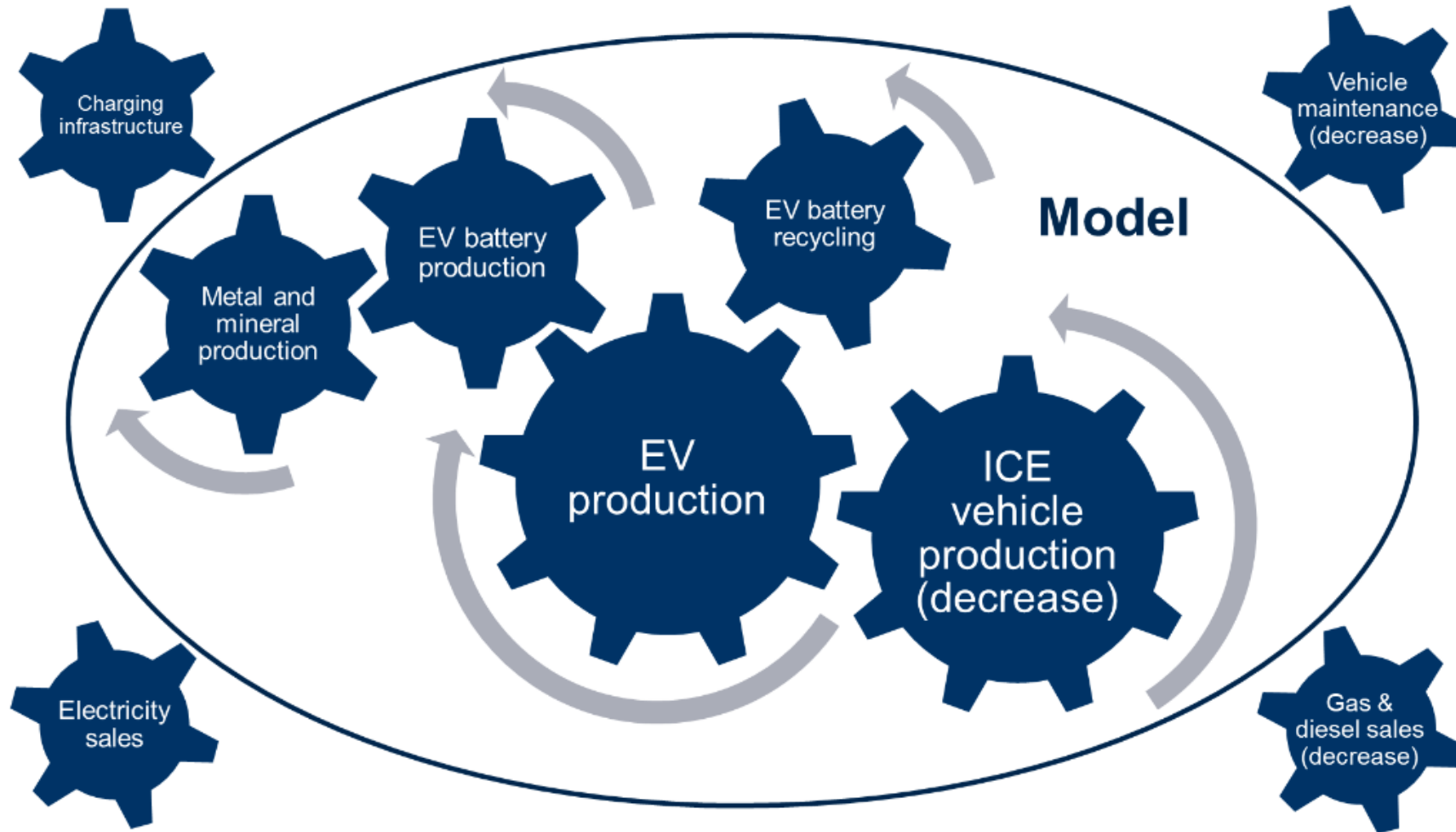
	Impact Type	2030	2040
Moderate	Employment (jobs, thousands)	350	570
	Compensation (billions)	\$20	\$40
	GDP (billions)	\$60	\$110
	Output (billions)	\$90	\$150
High	Employment (jobs, thousands)	510	740
	Compensation (billions)	\$40	\$50
	GDP (billions)	\$90	\$150
	Output (billions)	\$130	\$200

THE MACROECONOMIC IMPACT OF INCREASED U.S. ELECTRIC VEHICLE BATTERY PRODUCTION

Source: The Macroeconomic Impact of Increased U.S. Electric Vehicle Battery Production, ERM Group, January 2023, REMI Model Results

Assuming No Increase in Foreign Competition and Supporting Government Policy

Conceptual Economic Modeling Components



Policy Considerations

- Potential for tariffs, subsidies and other interventions to protect US auto industry
- Investment in retaining programs for displaced workers
- Incentives for US manufactures to innovate and compete, could quickly become a bad bet if other integrated polices are not set
- EV charging infrastructure and supporting electric utility investments
- Rare earth minerals and related battery material sourcing considerations
- Need for collaborative efforts between government and industry stakeholders


New Summit Consulting and W.E. Upjohn Institute Study finds MEP generates substantial 17.2:1 ROI among other positive findings

April 29, 2024



The National Institute of Standards and Technology's Hollings Manufacturing Extension Partnership (MEP) commissioned a new study by Summit Consulting and the Upjohn Institute. The study finds the MEP program generates a substantial economic and financial return of 17.2:1 for the \$175 million invested in fiscal year 2023 by the federal government.

The study finds that 309,000 more Americans were employed because of Manufacturing Extension Partnership Center projects. The study also examined areas of economic impact not previously reported by the MEP program, finding that personal income is \$22.5 billion higher and gross domestic product is \$34.1 billion larger.

The study is available at <https://www.upjohn.org/about/news-events/study-finds-171-return-manufacturing-extension-partnership-program> 

- Consistent support for job retraining, upskilling needed to compete in evolving motor vehicle manufacturing space.
- Need for integrated policy planning to maximize outcomes for all stakeholders

Benefits

- Increased affordability of electric vehicles (EVs)
- Greater access to environmentally friendly transportation
- Potential for lower overall transportation costs and increased disposable income
- Boost in adoption rates of EVs due to lower prices
- Enhanced competition leading to innovation and better features in EVs

Costs and Challenges

- Critical disruption to US EV manufacturing, leading towards job losses and unrealized potential in the US auto manufacturing sector, related supply chain and other downstream economic implications
- Pressure on US manufacturers to lower prices, unsustainable
- Decline in market share for US auto companies
- Need for policy intervention to support domestic industry

Economic Impact Analysis Scenarios for Discussion

- Projected US EV Sales - high of 60%, low of 20% of auto Market by 2032
- 9% - Current share of domestic consumption of EVs relative to overall automobile US consumption
- Intent of preliminary simulations is to provide directional impacts and better understanding of policy implications

20% Increase in Foreign Import Costs for Motor Vehicle Manufacturing and Motor Vehicle Parts Manufacturing

- Scenario provides a directional understanding of the potential impacts
- Does not directly assume revenues from tariffs goes towards industry and consumer supporting policy intervention
- Hypothetical scenario starts in 2025 through 2034

20% Increase in Foreign Import Costs for MV Manufacturing and MV Parts Manufacturing, with Equal Rebate

- Same as above, includes rebate to reflect tax revenue, assumes 50% of rebates goes directly to industry, 50% towards reducing price of new motor vehicle purchases

Q&A

Please enter your questions into the question box now!