

ZEV Rules & Their Impact

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August 25, 2022



ALLIANCE
FOR AUTOMOTIVE
INNOVATION

Presentation Topics

- Introduction
- New Mexico ZEV Rulemaking
- California Advanced Clean Cars 2
- Federal Inflation Reduction Act
- ZEV Support Measures
- ZEV Future & Impact on Dealers

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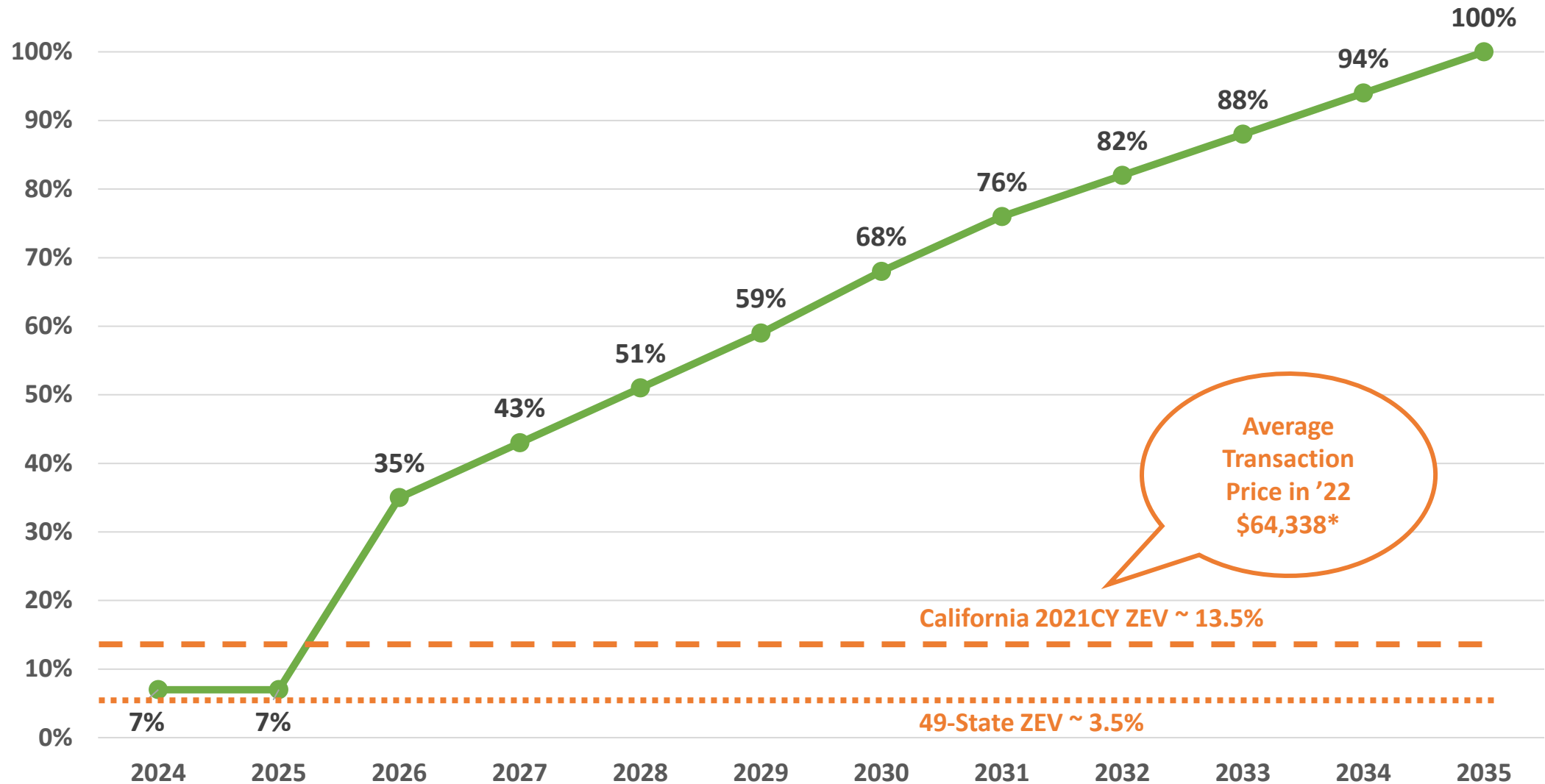
VOLKSWAGEN
GROUP OF AMERICA



1 Tailpipe, 3 Agencies, 6 Regulations for New Mexico

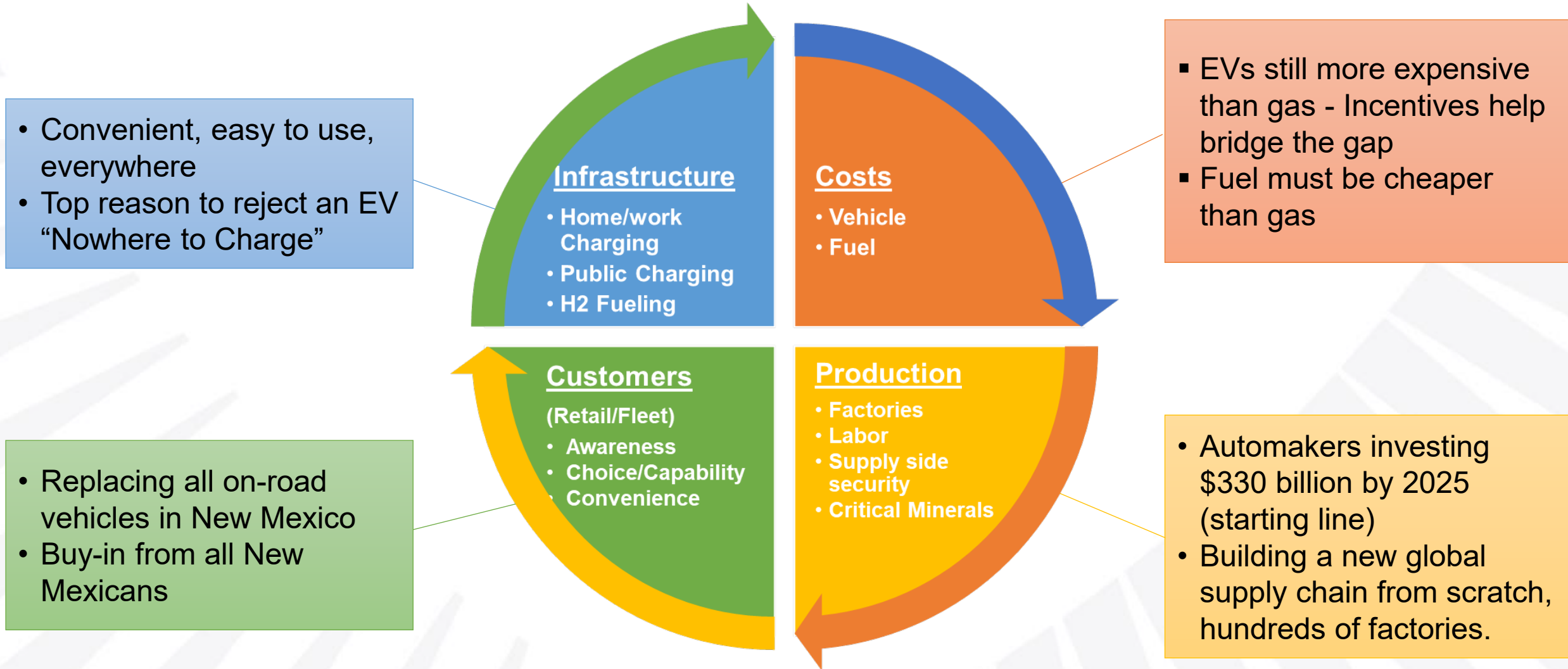
| CARB Advanced Clean Cars I | U.S. EPA | NHTSA |
|---|--|--|
| GHG, 2021-25MY (GHG, Fuel Economy) Adopted 2012 | GHG, 2023-26MY (GHG, Fuel Economy) Adopted Dec, 2021 2026 EPA > CARB | CAFE, 2024-26MY (Fuel Economy) Adopted Apr 2022 |
| LEV III, 2015-25MY (Criteria Emissions) Adopted 2012 | Tier 3, 2017-25MY (Criteria Emissions) Adopted 2012 | |
| ZEV, 2015-25 (Criteria Emissions, GHG, Fuel Economy) Adopted 2012 | | |

California Advanced Clean Cars II – ZEV



* See, <https://mediaroom.kbb.com/2022-06-09-New-Vehicle-Prices-Flirt-with-Record-High-in-May,-According-to-Kelley-Blue-Book,-as-Luxury-Share-Remains-Strong>

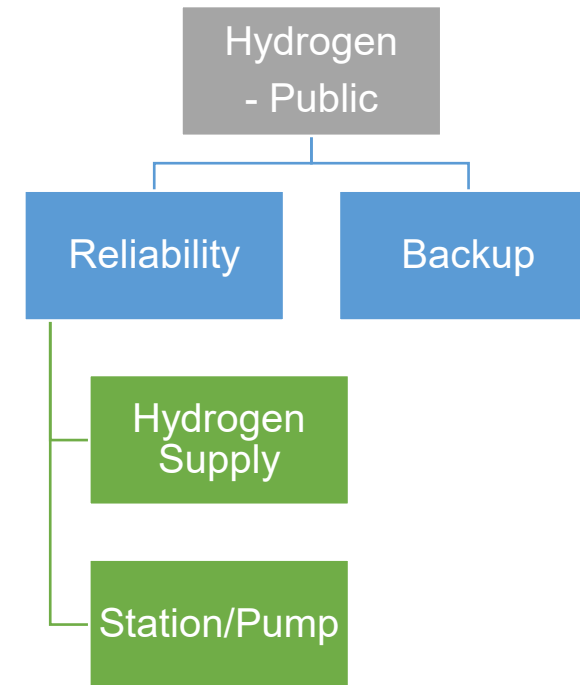
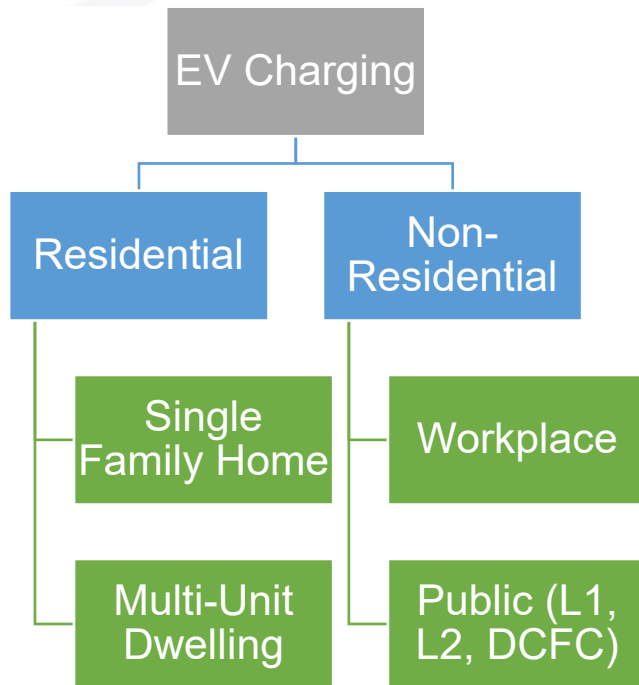
Market Feasibility



Market Feasibility

- Every business
- Every home
- Every parking spot

- Infrastructure (hydrogen and electric charging)
 - Building Codes
 - Public Utilities Commission
 - Federal funding (\$5 billion total, \$38 million for NM)
 - Is the state assessing what is needed vs what is available?



Market Feasibility

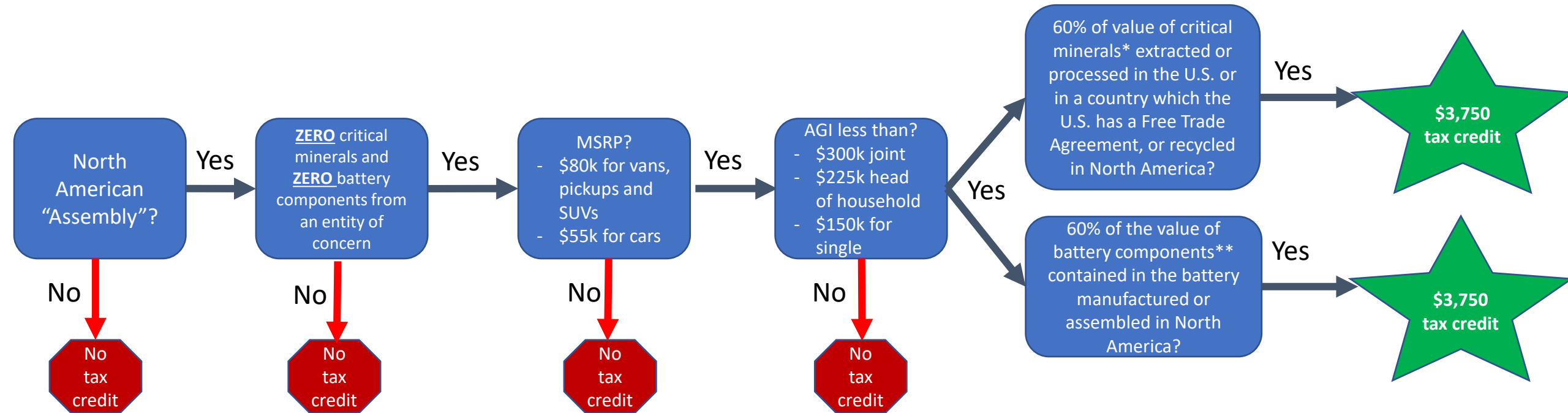
- Incentives
 - ZEV Consumer Purchase Rebates
 - Clean Fuels Reward Consumer Rebates
- Consumer Awareness
 - Public and private fleet purchase requirements for light-duty vehicles
 - Infrastructure

• Incentives help with gap between ICEs and EVs

• Lead by example
• Help businesses learn about the value of EVs

Inflation Reduction ACT (IRA) EV Tax Credit

2023-25



*Critical Minerals:

- Before CY2024 – 40%
- 2024 – 50%
- 2025 – 60%
- 2026 – 70%
- After 2026 – 80%

**Battery Components:

- Before CY2024 – 50%
- 2024-2025 – 60%
- 2026 – 70%
- 2027 – 80%
- 2028 – 90%
- After Dec. 31, 2028 – 100%

Notes:

1. All of the above is Auto Innovators staff interpretation of legislative language and pending Department of Treasury draft guidance to be issued by the end of December 2022
2. MSRP and AGI are not indexed to inflation
3. Critical minerals are calculated as the critical minerals contained in such a battery as certified by the manufacturer
4. Battery components are calculated as the value of components contained in such a battery as certified by the manufacturer
5. Excluded entities (China, Russia, Iran, North Korea):
 - Starting Jan. 1, 2024, no components contained in a battery of such vehicle can be manufactured or assembled by an entity of concern. **This makes a vehicle placed in service after 12/31/2023 ineligible**
 - Starting Jan. 1, 2025, no applicable critical minerals contained in a battery can be extracted, processed, or recycled by a foreign entity of concern. **Vehicle placed in service after 12/31/2024 is ineligible. See**
6. Aggregate battery capacity must be greater than 7 kWh

EV Prices Increasing

Bloomberg Green

Green
Hyperdrive

Electric Vehicles Are Out of Reach for Most U.S. Consumers

More than supply shortages affecting manufacturing, the bigger problem with EVs is the hefty pricetag.

Tesla, GM and Ford Want to Sell More EVs. But Can Consumers Afford Them?

Electric vehicles were always a costly premise for both automakers and consumers.

VIDHI CHOUDHARY • 8 HOURS AGO

Autos & Transportation

Tesla raises prices for second time in days on rising costs

Reuters

March 15, 2022
4:43 AM PDT
Last Updated 3 days ago

JANUARY 27

March 1, 2022
8:02 PM PST
Last Updated 16 days ago

Charged

Rivian raises EV prices by 20%, inviting customer ire, taunt from Musk

By Hyunjoo Jin

Tesla is not working on its \$25,000 electric car at the moment, says Elon Musk

Fred Lambert - Jan. 27th 2022 10:46 am PT [@FredericLambert](#)

March 17, 2022
4:01 PM PDT
Last Updated 4 hours ago

Charged

Rising costs have Lucid CEO eyeing price hike for future electric cars

By Tina Bellon and Hyunjoo Jin

March 17, 2022 06:15 AM | 17 HOURS AGO

Chip shortage likely to continue through 2022, analyst says

The semiconductor shortage that crippled production in 2021 is unlikely to ease until 2023, an analyst at McKinsey said.

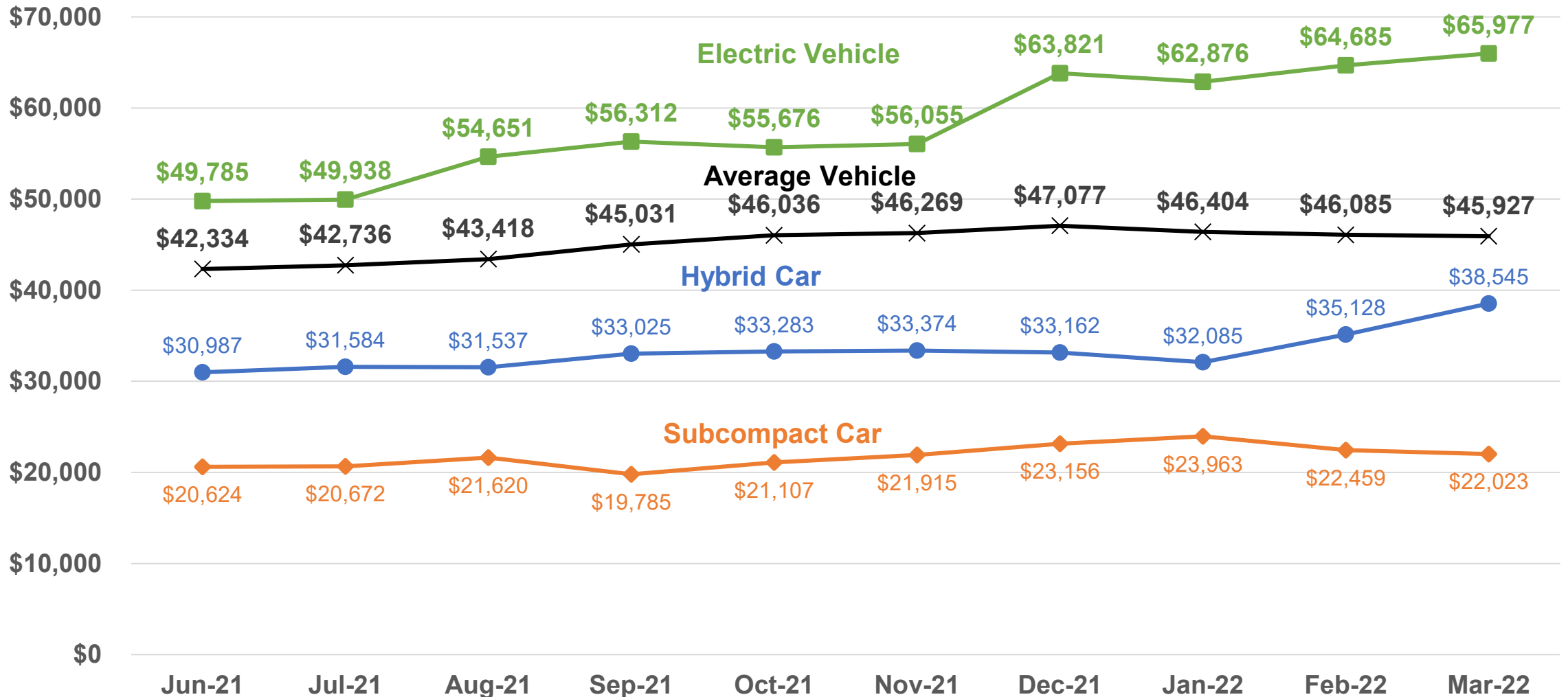
PETER SIGAL [Twitter](#) [RSS](#) [Email](#)

EV Industry Faces Significant Headwinds 2026-2030

- Average EV prices (over \$60k*) higher than any other segment except luxury and high-performance
 - Suggests current buyers are not a cross section of New Mexico, but mostly affluent single-family homeowners
 - Transition to 30, 50, or 70% requires broader participation (MUDs, lower income)
 - ACC II “ZEV Assurance measures” (durability, warranty, minimum range, data standardization, charging requirements, convenience charger, etc.) will increase prices further
- Demand for and prices of raw materials (Li, Ni, Co) sharply higher resulting in future higher battery costs
- Supply chain and chip shortage limiting production of all vehicles
- New factories required to meet increased requirements globally
- Infrastructure – residential, workplace, corridor, and public – still lags

Kelly Blue Book Transaction Prices

KBB Transaction Prices



EV Battery Raw Material Prices Increasing

Analysts: Raw material price surge will put EV battery affordability gains on hold until 2024



STEPHEN EDELSTEIN

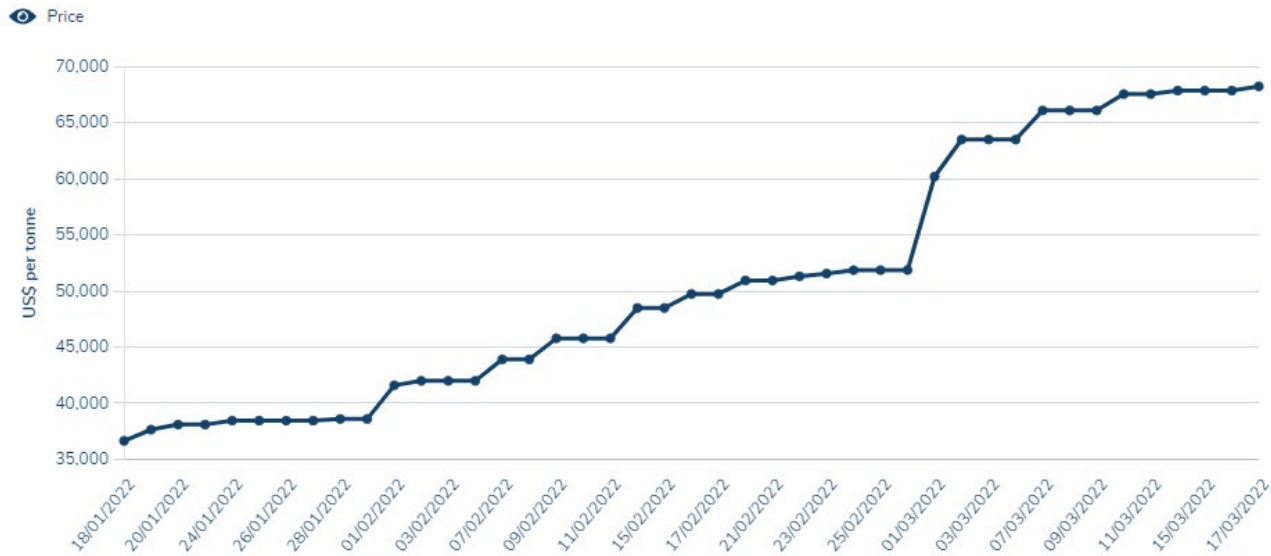
MARCH 10, 2022

28 COMMENTS



View Gallery

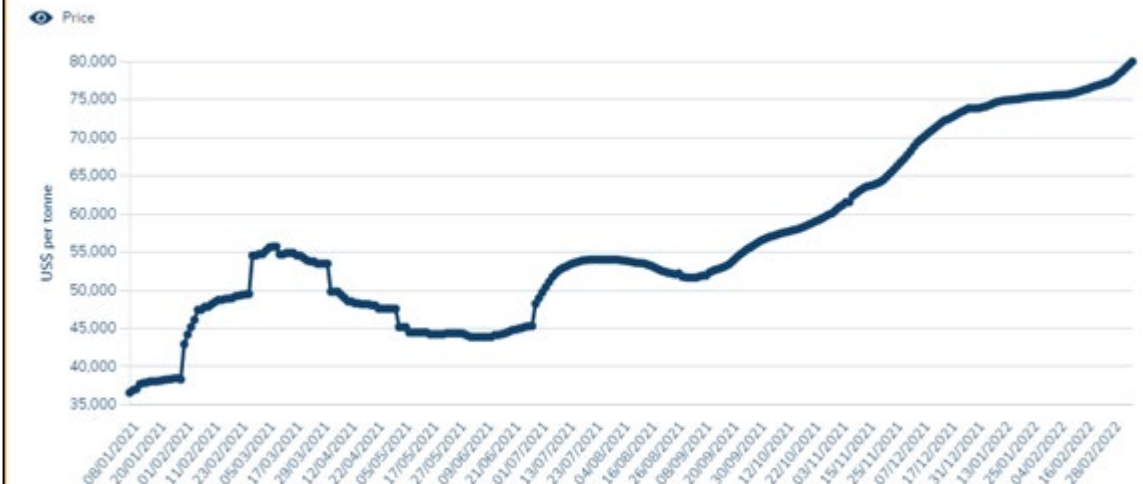
LME Lithium Hydroxide CIF (Fastmarkets MB) price graph



LME Nickel Official Prices curve



LME Cobalt (Fastmarkets MB) Closing Prices graph





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