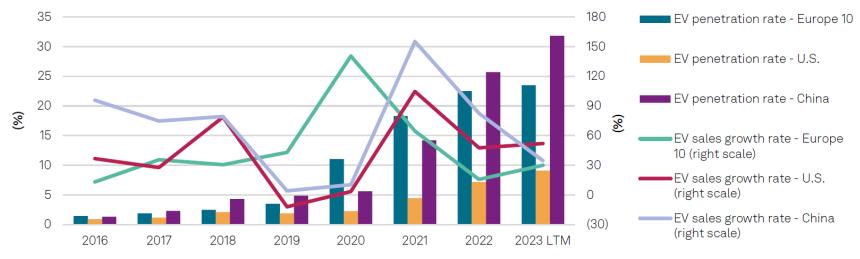


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January 29-February 1, 2024 Bellagio Las Vegas

ALL IN IT TO WIN IT

Electrification | Despite slowing growth rate, EV share will rise



EV sales growth and penetration rate

LTM-Latest twelve months to Nov. 2023. Source: S&P Global Ratings.

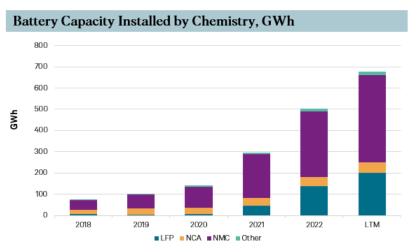
S&P Global Base Case For 2025: Global EV Share: ~20% (China ~40%, Europe ~30%, U.S. ~15%) Ratings

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Electrification | Supply-demand imbalance \rightarrow Pricing pressure

• **Supply**: Global battery 'arms race' fueled by joint-ventures, partnerships, IRA subsidies



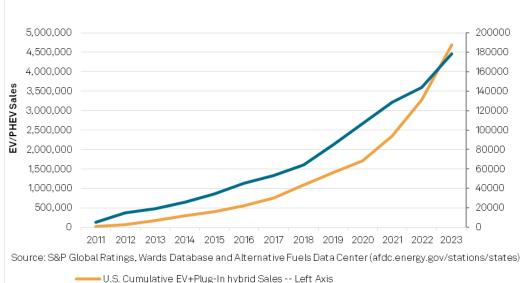
• **<u>Demand</u>**: Hesitant 2nd wave of adopters with **affordability**, charging/range concerns.

S&P Global Ratings

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Electrification | Charging Infrastructure & Range Anxiety



U.S. Cumulative Number Of Charging Points vs. Cumulative EV/PHEV Sales

S&P Global Ratings

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2023: ~178k public chargers



2030: 1.2 million public chargers

(182k DC fast EV charging ports with a power output of >=150 kW and ~1 million Level 2 public EV charging ports to support a baseline scenario of 33 million EVs on the road by 2030)

Source: <u>Alternative Fuels Data Center; 2030 National Charging</u> <u>Network study</u> – National Renewable Energy Laboratory



Electrification | Key factors for global automakers' credit ratings

Near-Term Impact (2024-2025)

- Temporary pause on battery plant investments will help cash flow
- Powertrain mix: less EVs \rightarrow less overall losses

Long-term Impact (beyond 2025)

- Slowdown will delay EV profit targets
- Competitive gap vs. first-movers will widen
- Potential for strategic mis-steps, wrong bets

Ratings Headroom Will Narrow – EV Scale and Profits Will Remain Elusive



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