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# Where Silver Powers Electric Vehicles

Silver isn't in the battery itself but it's absolutely essential to making electric vehicles work safely and efficiently. Let's explore the hidden role of this precious metal in EV technology.

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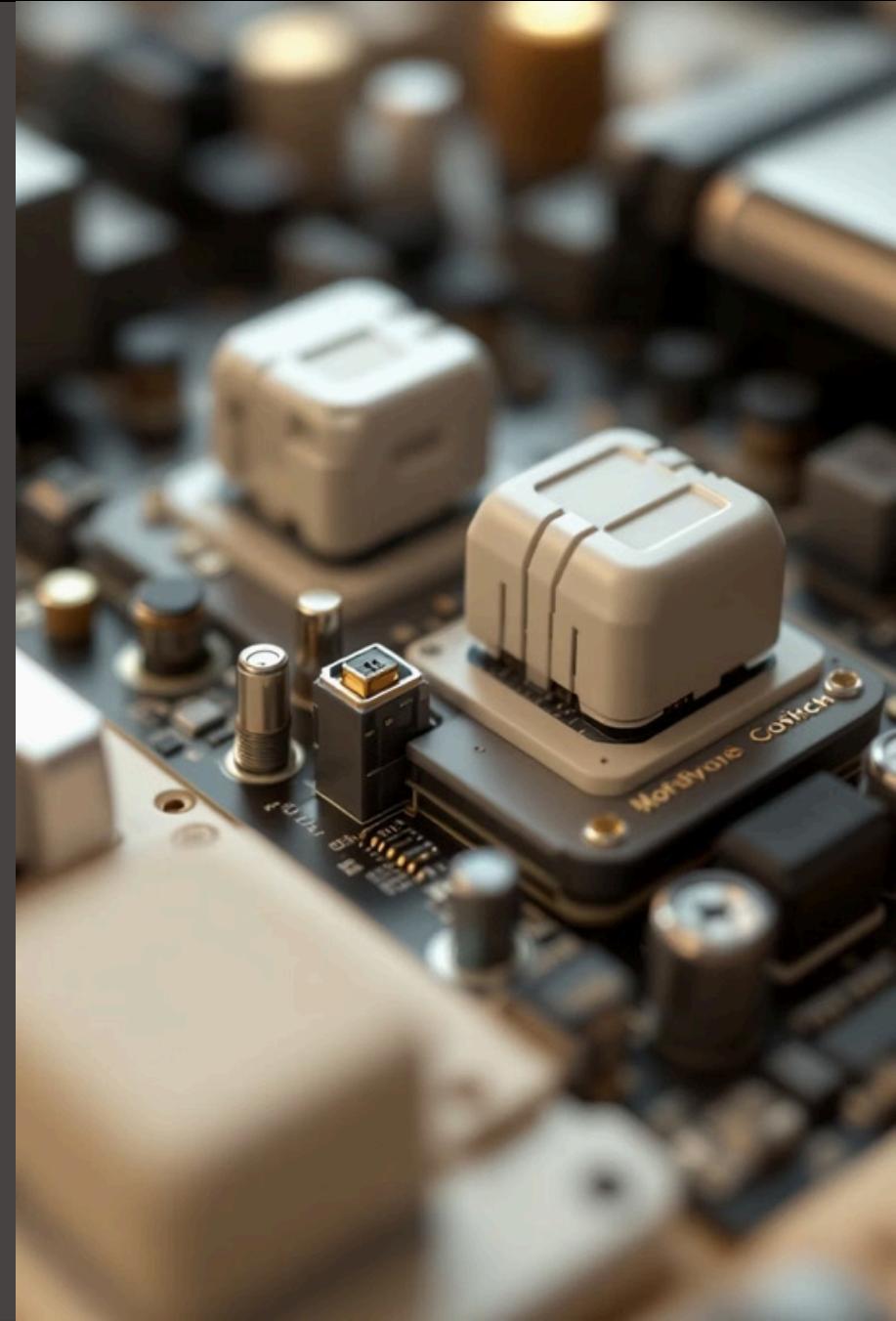
# Electrical Contacts & Connectors

## Why Silver?

Silver is the best electrical conductor of all metals, making it indispensable for high-voltage systems. EVs operate at much higher voltages than petrol vehicles, demanding reliable, low-resistance contacts throughout.

## Where It's Used

- Relays and switches
- Contact points High-voltage
- connectors linking battery, motor, and inverter



# Battery Management System



## Printed Circuit Boards

Silver enables precise signal routing across complex PCB layouts



## Micro-Switches

Silver contacts ensure fast, reliable signal transfer



## Sensor Connections

Critical for accurate monitoring and safety systems

The BMS acts as the "brain" of the battery pack. Silver components help ensure accurate monitoring, rapid signal transfer, and fail-safe operation essential for battery longevity and driver safety.

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# Power Electronics: The Conversion Core

EVs rely heavily on sophisticated power electronics to convert DC battery power into AC motor power, manage rapid acceleration, and capture energy during regenerative braking.



## Solder Materials

High-performance silver solder for critical joints



## Conductive Pastes

Silver-based pastes for optimal conductivity



## Semiconductor Contacts

Silver outperforms copper under high heat and current

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# Charging Systems: Fast & Reliable

Silver plays a crucial role in both on-board chargers and external charging infrastructure. Fast chargers carry extremely high currents, making silver-coated contacts essential.

## Key Benefits

- Reduced energy loss during charging
- Lower heat generation
- Extended contact lifespan
- Enhanced safety margins



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# Motors & Auxiliary Systems



## Motor Controllers

Precise control of electric motor performance and efficiency



## Cooling Electronics

Managing thermal systems to protect battery and drivetrain

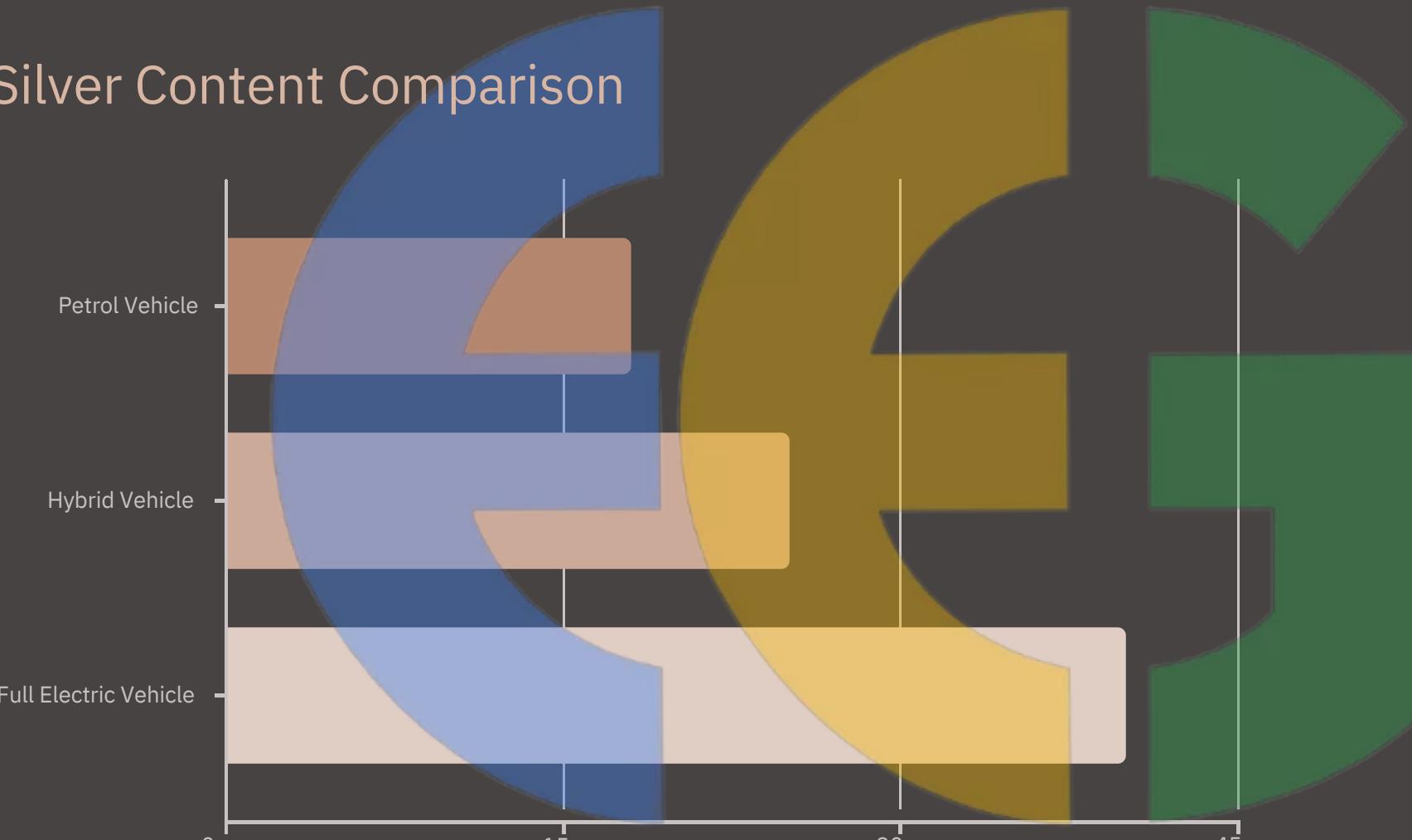


## Safety Systems

Critical connections in airbags and advanced braking electronics

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# Silver Content Comparison



Electric vehicles use **30-100% more silver** than traditional petrol cars, ranging from 25 to 40 grams per vehicle. This dramatic increase reflects the greater complexity and higher performance demands of EV electrical systems.

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# Market Implications

1

Rapid EV Growth

Global EV production accelerating across all major markets

2

Higher Silver Demand

Each EV requires significantly more silver than conventional vehicles

3

Supply Constraints

Mining supply grows slowly whilst demand surges

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# Investment Outlook

## Why Silver Prices Trend Upward

The confluence of rapidly expanding EV adoption, increasing electronics content per vehicle, and constrained mining supply creates sustained upward pressure on silver prices.

This structural shift in demand represents a long-term tailwind for silver as an industrial commodity and investment asset.

25M+

EVs Projected

Global EV sales forecast for  
2024

40g

Per Vehicle

Average silver content in full  
EVs

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# Key Takeaways

## Common Misconception

EV batteries are **not** made of silver

## The Reality

EV electrical systems **depend** on silver for safety, efficiency, and durability

## Market Impact

More EVs equals higher long-term silver demand and price support

As the automotive industry undergoes its greatest transformation in a century, silver emerges as an essential enabler of electric mobility driving both technological innovation and commodity market dynamics.

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