

# Electrifying America: The State of the US EV Charging Infrastructure

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Your Strategic Growth Partner within the Electrical Infrastructure Manufacturing space.

Addressing the global imperative of combatting climate change is an unparalleled challenge, prompting a significant focus from energy stakeholders on renewable energy generation.

PTR Inc. was founded to first; **understand, document, and communicate** the intricacies of this challenge, and second; **to identify the best technologies** and associated business models to integrate into complex legacy systems. With over a decade of experience in the Power Grid and New Energy sector, PTR Inc. has evolved from a core market research firm into a comprehensive Strategic Growth Partner, empowering clients' transitions and growth in the renewable energy landscape, particularly within the electrical infrastructure manufacturing space.

To ensure we hold the highest standards when delivering our work to our customers, we adhere to the following **three laws of PTR:**

- No 'black box' datasets
- Upfront methodology and confidence rating data

Transparency



- Deep technical knowledge
- Complete coverage of Market Size, Competitive Analysis, Market Access

Diligence



- Holistic approach, allowing all stakeholders perspectives
- Training with new stakeholders

Digestibility



# PTR Inc. What we do and Why we do it



Enable proactive decision making by empowering businesses with tools and information based on transparent methodologies.

- PTR Inc. is committed to being your Strategic Growth Partner in the Electrical Infrastructure Manufacturing Sector. Leveraging our unparalleled expertise and diverse capabilities, we deliver tailored solutions and strategic insights to empower your growth and business development efforts. Through collaborative service offerings, we drive sustainable growth and ensure long-term success for our valued clients.



## Market Research, Consulting, and Advisory:

Our specialized bespoke and syndicated market intelligence and consulting & advisory services on Power Grid Equipment and Energy Transition Infrastructure give our clients the strategic advantage by enabling proactive decision-making supported by extensive and reliable data and analysis



## Cognito Expert Network

The Cognito Expert Network boasts a diverse panel of global experts spanning multiple sectors of the industry, blending diverse expertise to propel the new energy and power grid industry forward.



## Marketing Support

With PTR's Marketing Support Service, we aim to extend our marketing capabilities to you, to help promote your latest cutting-edge energy transition solutions, through collaborative content marketing efforts.



## Matos AI

Industry agnostic data automation tool. Matos plans to reduce the time spent on secondary research and data cleaning to 20% with research automation tools.

# PTR's Electrical Infrastructure Research Capabilities



PTR's Research Capabilities in Terms of Off-the-Shelf Reports for Power Grid and New Energy Topics



**Transformers**  
(Distribution, Power)



**Substation Automation**  
(Dist. vs Cent.)



**EVCI (EV Charging Infrastructure)**  
(Public, Private, Passenger/Comm.)



**Switchgear**  
(HV, MV)



**Port Electrification**  
(Shore-to-Ship, Microgrid)



**Energy Storage Value Chain**  
(Utility Scale, C&I)



**Flexible AC Trans. Systems**  
(SVCs, STATCOMs)



**Smart Meters**  
(Power Quality, AMI)



**COHV**  
(BEVs, PHEVs, FCEVs, ICEs)



**HVDC Market Analysis**  
(VSC, LCC, Cables)



**Power Factor Correction**  
(Active, Passive)



**H<sub>2</sub> Hydrogen**  
(Tech., Demand, Value Chain)



**AI in Power Grid**  
(DERM, DR, VPP, & EVs)



**Grid Communication**  
(Private LTE, 5G)



**Impact of EVs on Power Grid**  
(Quantitative, Trafos, Switchgr.)



**Grid Investment Tracker**  
(TSOs & DSOs)



**Industrial Motors & Drives**  
(MV/LV - Custom)



**Financial Trackers**  
(Grid Investments,  
Company Financial Breakdowns)



**Grid Modernization & Flexibility  
Technology Leaderboard**

# Agenda

- 01** ————— **Global EV & EVCI market overview**
- 02** ————— **US EV & EVCI market**
- 03** ————— **Policies & Incentives in the US**
- 04** ————— **Emerging technology trends**

# Global Overview

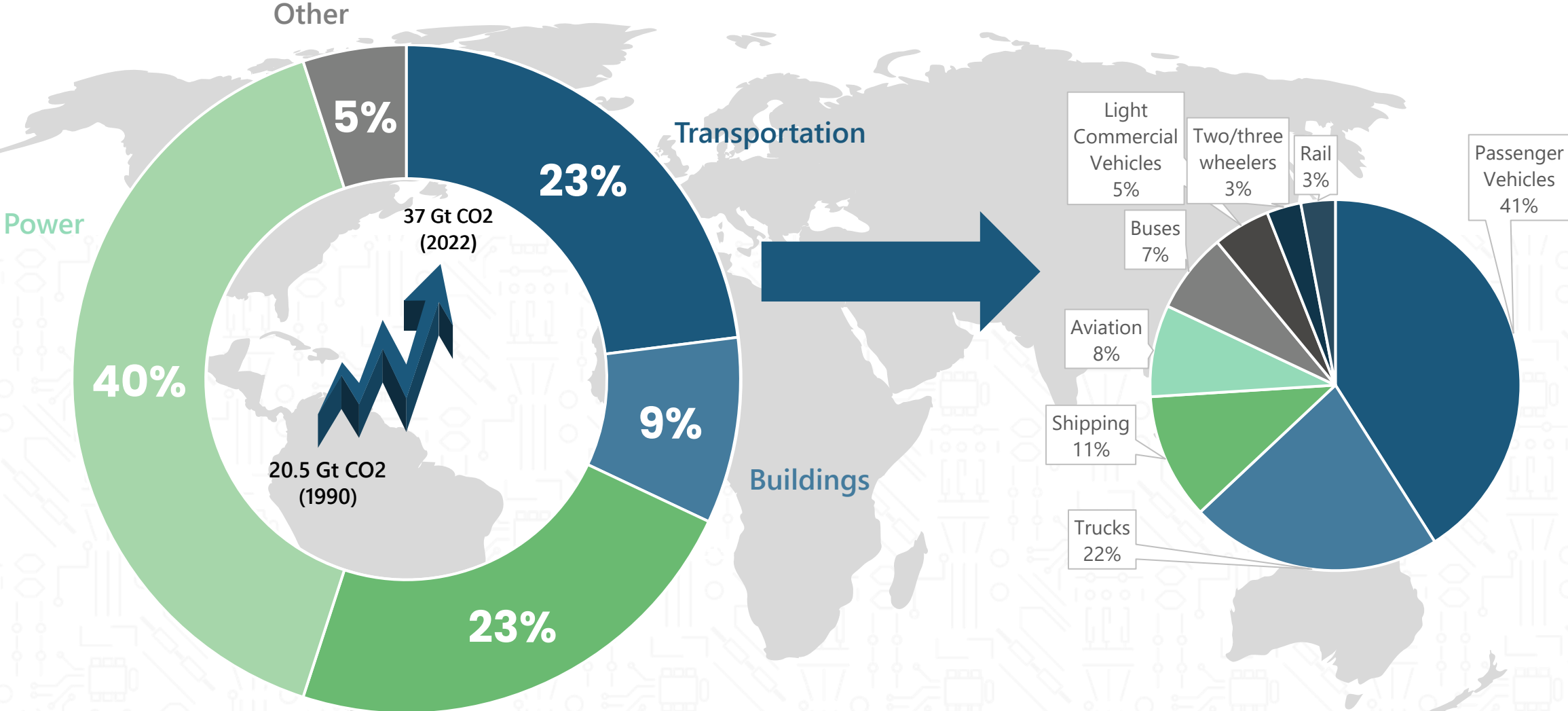
- Vehicle electrification trends
- Global EV chargers market trends

# 01

# Importance of Electrification in Transport Industry



Transportation Contributes 23% Towards GHG Emissions, with Passenger Vehicles as Biggest Contributor (41%)

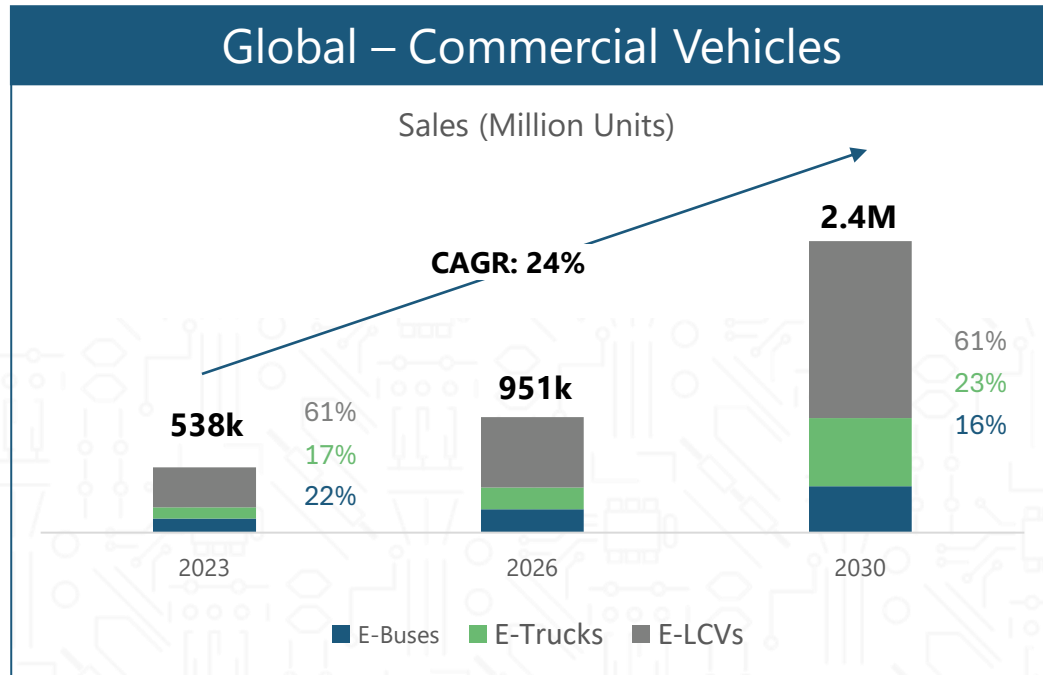


*GHG Emissions by sector are the global energy-related CO2 emissions. Gt= Gigatons*

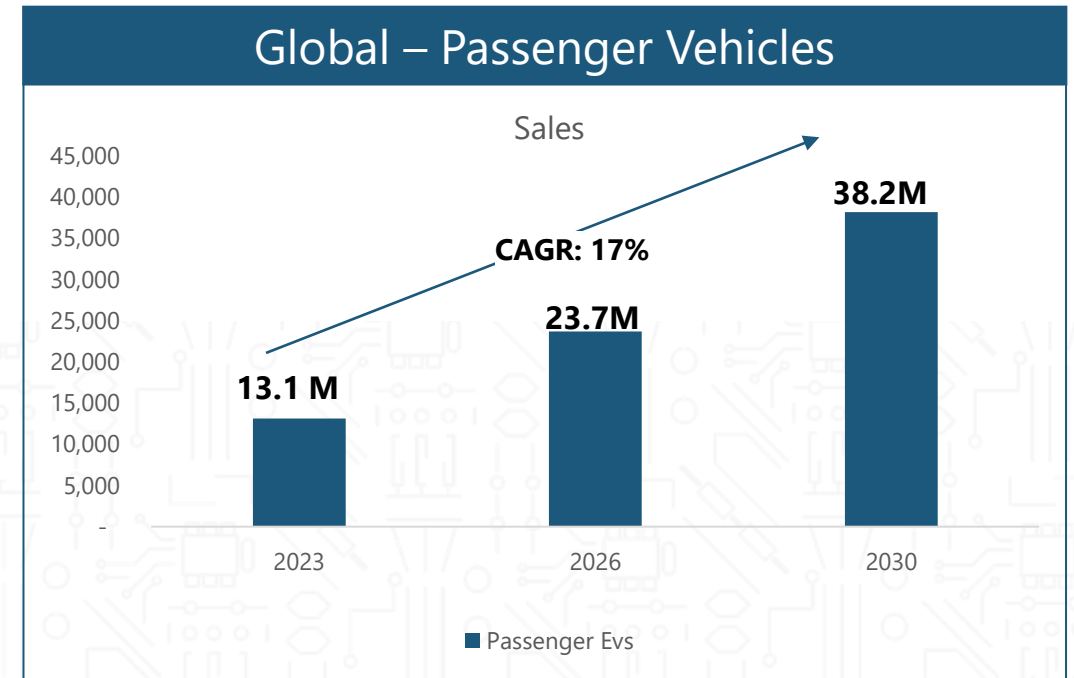
# Vehicle Electrification Trends



America Accounted for Almost 13% of Global PEV Sales; China Dominates the Global Electric Commercial Vehicle Sales



- China is the leader in electric commercial vehicle sales, with almost 70% of global sales.
- By 2030, Europe and the Americas will have almost 60% of the annual global sales share in the commercial vehicle segment.



- China is the leader with a global share of almost 60% of global sales of Passenger EVs in 2023.
- By 2030, Europe and the Americas will have almost 50% of the share in the passenger vehicles segment, which is currently 36%.

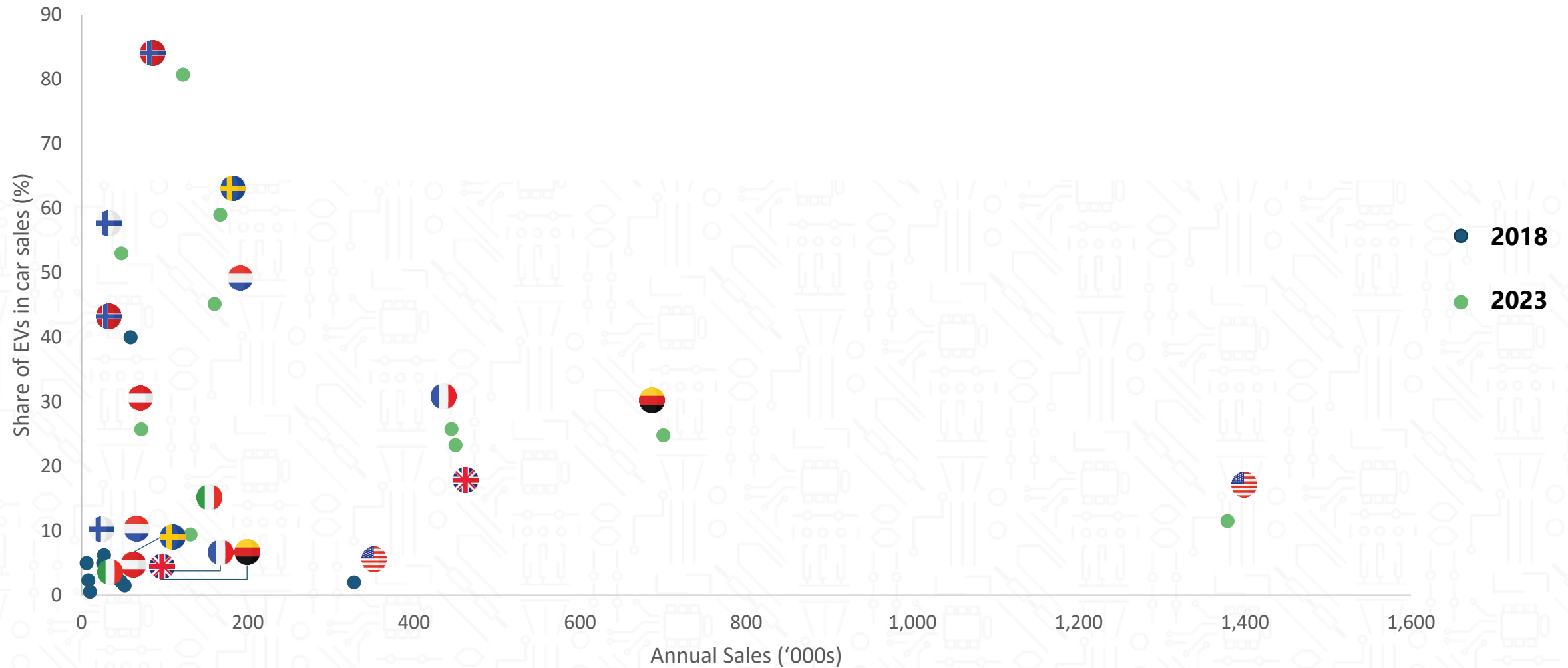


# Electrification Landscape



Norway, Sweden, Finland had the highest market share for electric vehicles in 2023

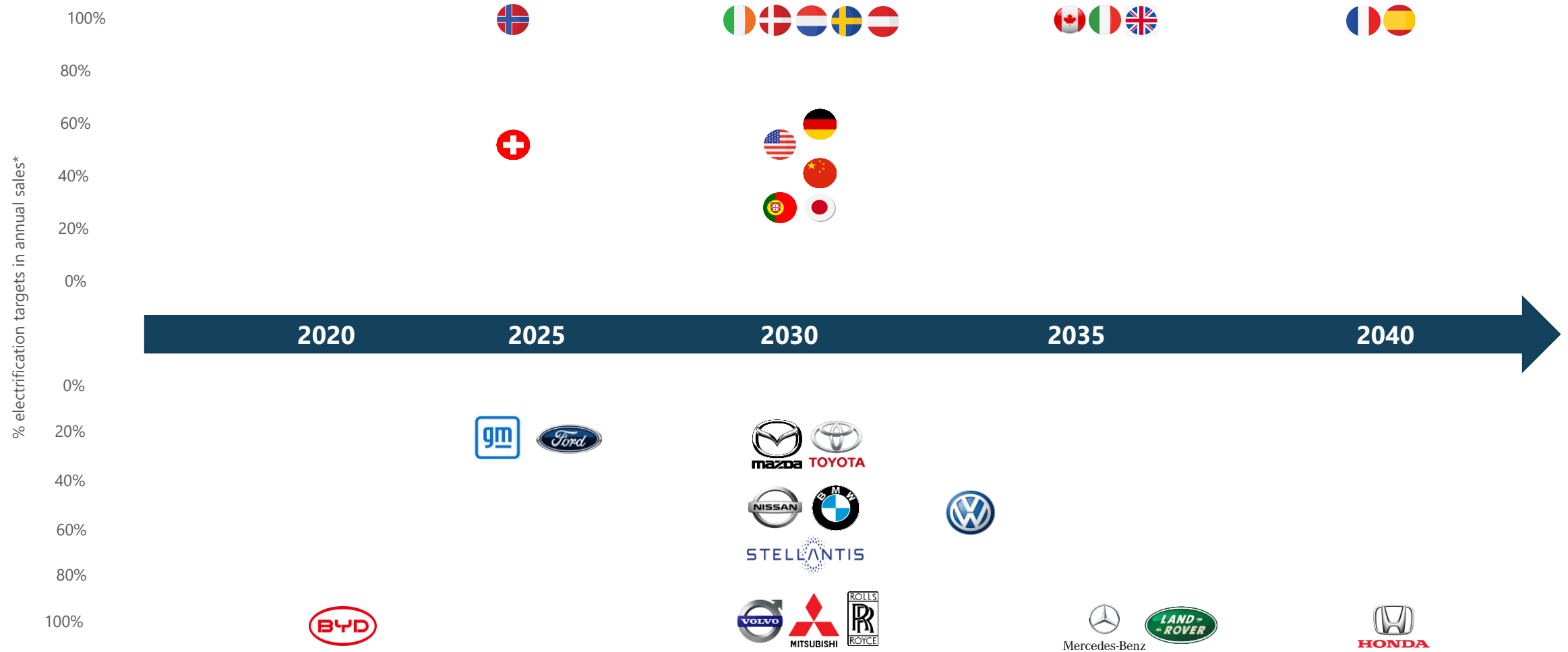
### Electric vehicle annual sales relative to market share of EVs



# Vehicle Electrification Targets



Targets and goals set for vehicle electrification by various stakeholders – passenger cars



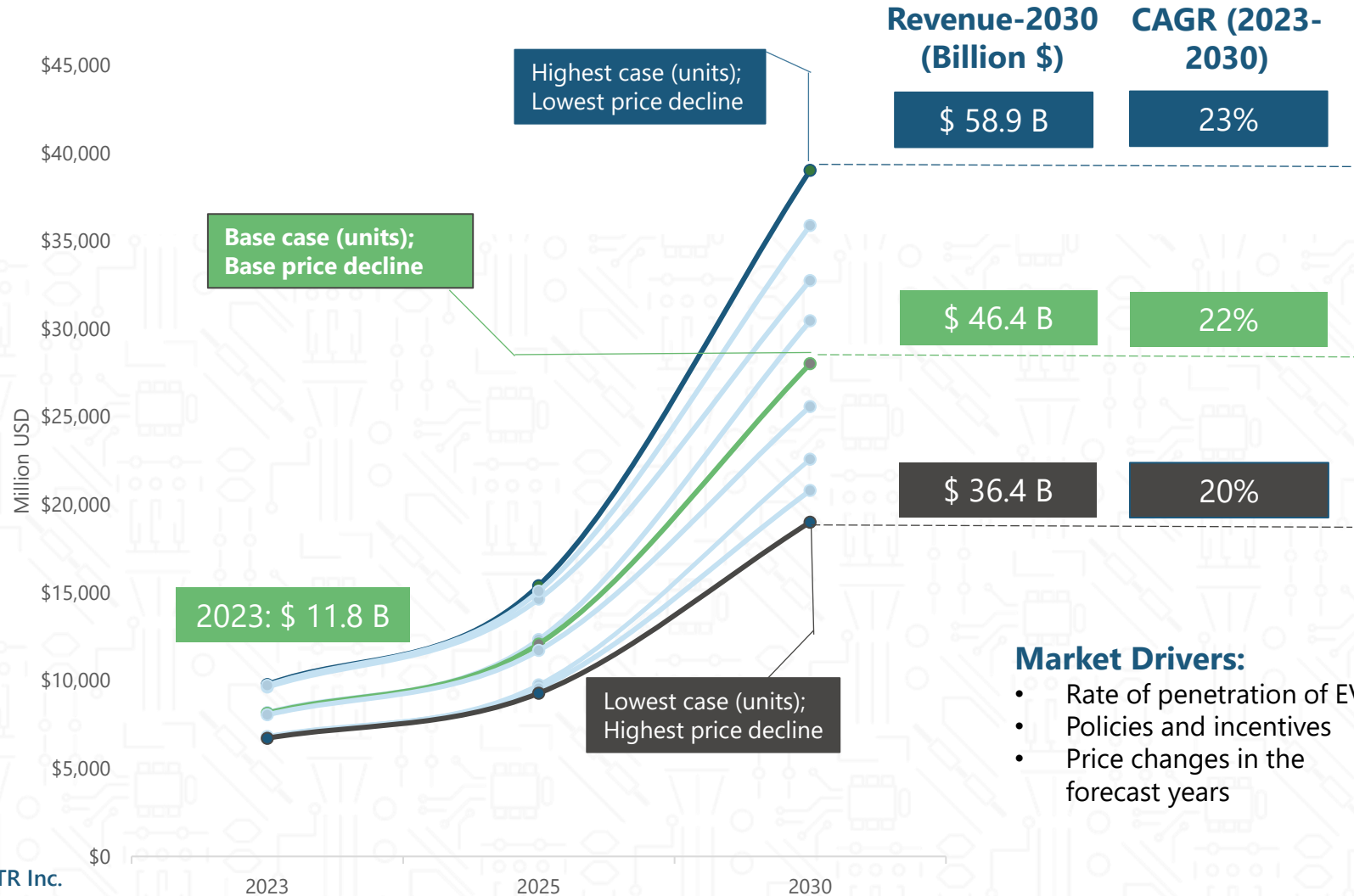
\*OEM targets represent sales in key markets

# Global EVCI Market Forecast



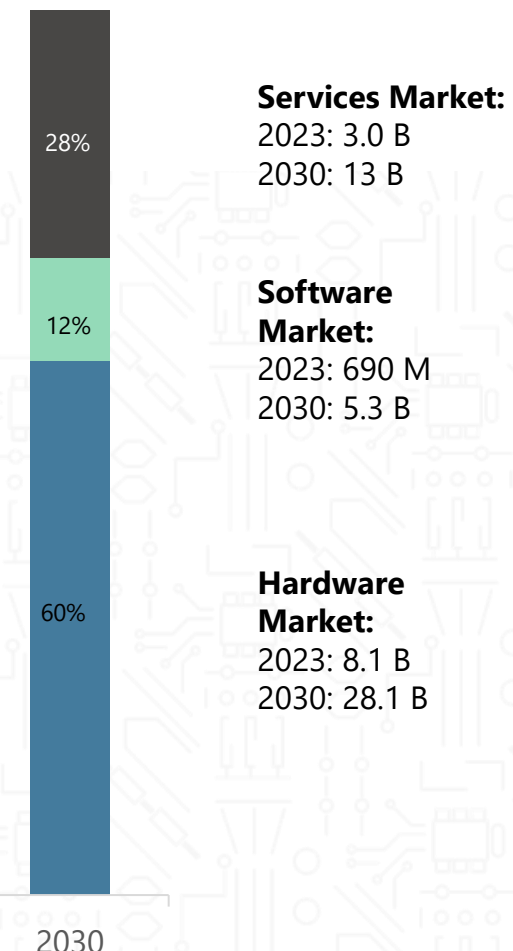
Volatile Forecasts; Impact of Implementation of the Plans and Future Price Decline

Possible Market Scenarios 2023-2030



### Market Drivers:

- Rate of penetration of EVs
- Policies and incentives
- Price changes in the forecast years



# US EV & Charging Infrastructure Market

- US vehicle electrification
- US EVCI Market
- US state-specific trends

# 02

# Key Trends in the US Market



Is the EV market slowing down? Potential Implications for EV Charging market.

## Electric Vehicles

- In early **2024**, growth in the US EV market experienced a **slowdown**
- **Tesla's** sales declined in comparison to the final quarter of 2023
- Despite the slowdown, overall EV sales **increased** during the first three months compared to the last quarter of 2023. The US sold **311,000 electric vehicles** in first quarter
- **March** saw a historic milestone with the highest-ever monthly EV sales, totaling **115,000 units**

## EVCI

- The EVCI market is projected to maintain **stability** despite fluctuations in the EV market for the foreseeable future, particularly during this period of market adjustment
- The market is getting ready to accommodate the influx of new manufacturing facilities established under initiatives like **Build America, Buy America**
- Challenges such as **permitting procedures** and extended lead times for installations, coupled with **constrained production capacities**, may impede the growth trajectory

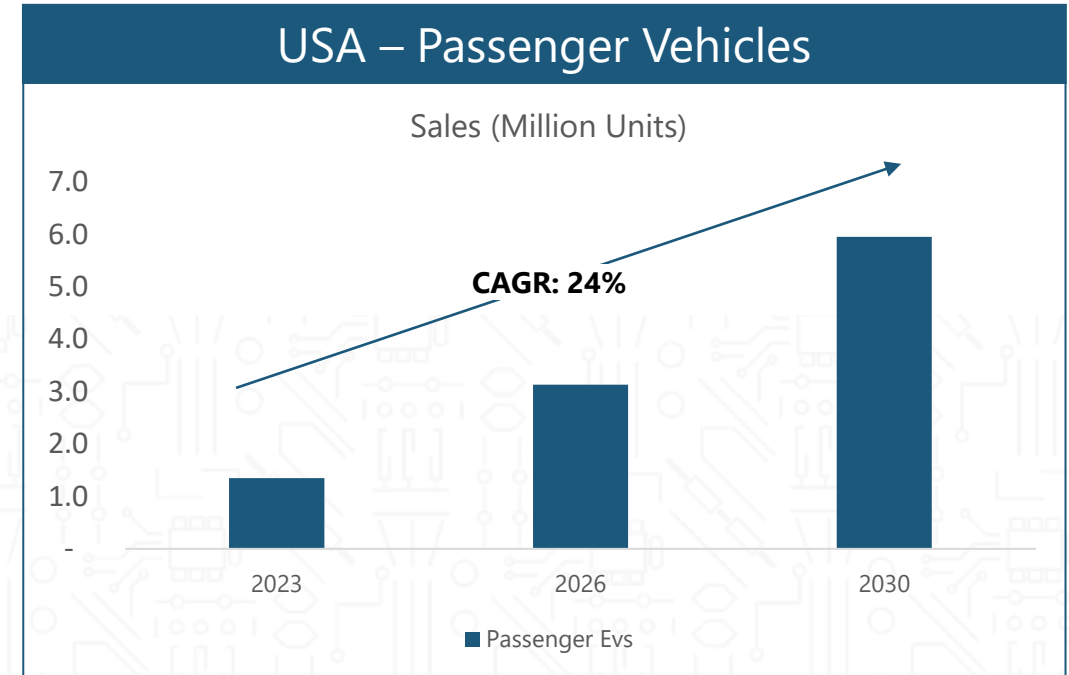
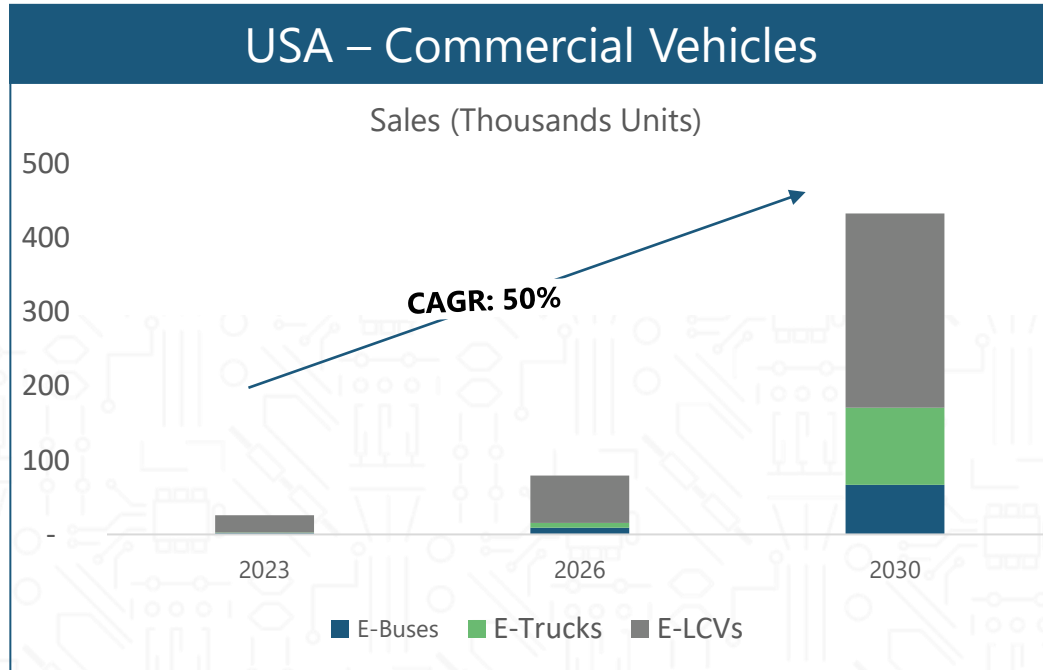
## Policies

- Continuation of current policies and initiatives such as the **NEVI funding** is anticipated even in the event of a government transition
- **Reversal** of policies and reductions in funding could lead to **reduced EV adoption** rates and subsequently **slower expansion of EV charging infrastructure**
- **15 states** contribute to **75%** of **EVCI market** in the US, most of these states have their own policies and initiatives

# Vehicle Electrification Trends - USA



Americas accounted for almost 13% of global PEV sales; the USA is almost 80% of sales in the Americas



- The compound annual growth rate (CAGR) for e-buses is projected at 72%, while e-LCVs are anticipated to grow at a rate of 41%, and e-trucks at an impressive 99%.
- USA's commercial vehicle segment is set to grow with a CAGR of almost 50% from 2023 to 2030.

- In the USA, electric vehicle sales stood at almost 11% of all passenger vehicle sales in 2023; the government's target is to reach 50% by 2030.
- Almost 15% drop in EV prices from 2022-2023.

# EVCI Market- USA

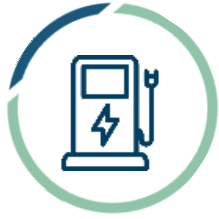


USA on Track to Lead the Global EVCI Market by 2030



Revenue-2023

USD 1.2 Billion

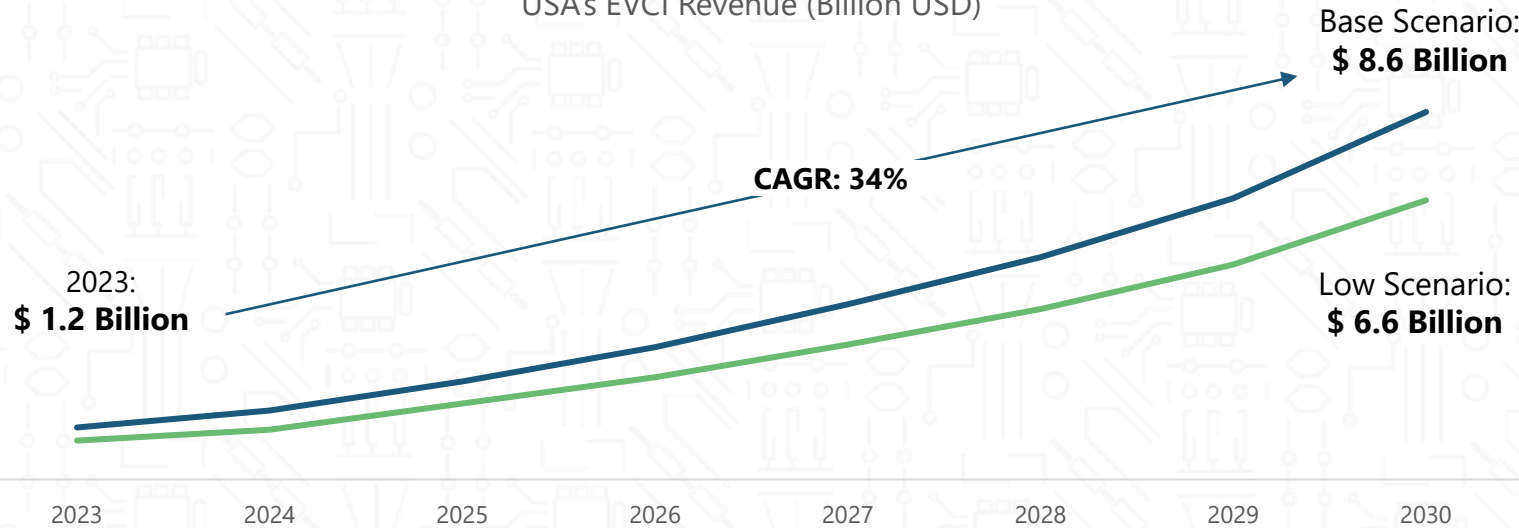


Revenue-2030

USD 8.6 Billion

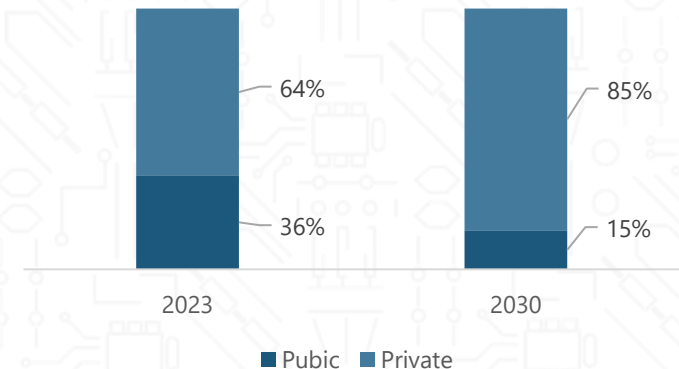
USA with an impressive CAGR of 34% (2023-2030)

USA's EVCI Revenue (Billion USD)



- **Public Charging:** The American public charging market will be dominated by **AC chargers** and **DC high-power chargers (>60 kW)**, with limited growth in chargers <60 kW.
- **Private Charging:** **AC charging** will dominate residential and workplace charging **LDVs**. However, **DC charging** is expected to grow exponentially for **HDV fleet charging**.

Public vs Private Market Split



# EVCI Market- USA



Market for DC High Power Chargers (>60 kW) is Estimated to be Around USD 3.2 billions in 2030



**Private Charger Market Revenue - 2023**

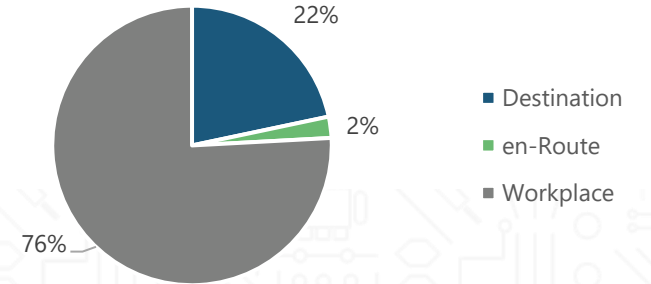
**USD 789 Million**



**Public Charger Market Revenue - 2023**

**USD 439 Million**

Application Split-2023



## Developments in Policy and Incentives

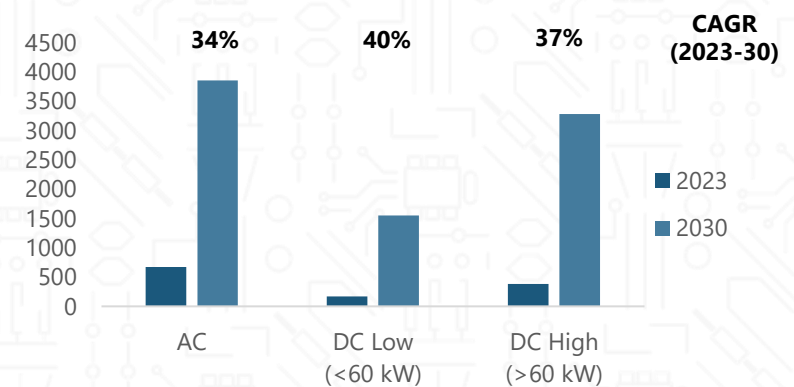
### Public Sector Initiatives:

- **Charging Fueling Infrastructure** grant program: **\$2.5 billion** allocated from **2023-2028** for Destination Charging.
- **Build America Buy America Act** mandates **55%** domestic manufacturing of chargers by **July 2024**.
- According to PTR's forecast, the public sector revenue is anticipated to be **USD 1300 Million by 2030**

### Private Sector Developments:

- Growing demand for **high-power chargers** due to rapid **commercial fleet electrification**.
- Adoption of **distributed architecture** in **depot charging** for **trucks and buses**.
- According to PTR's forecast, the private sector revenue is anticipated to be **USD 7392 Million by 2030**

Revenue by Charger Family





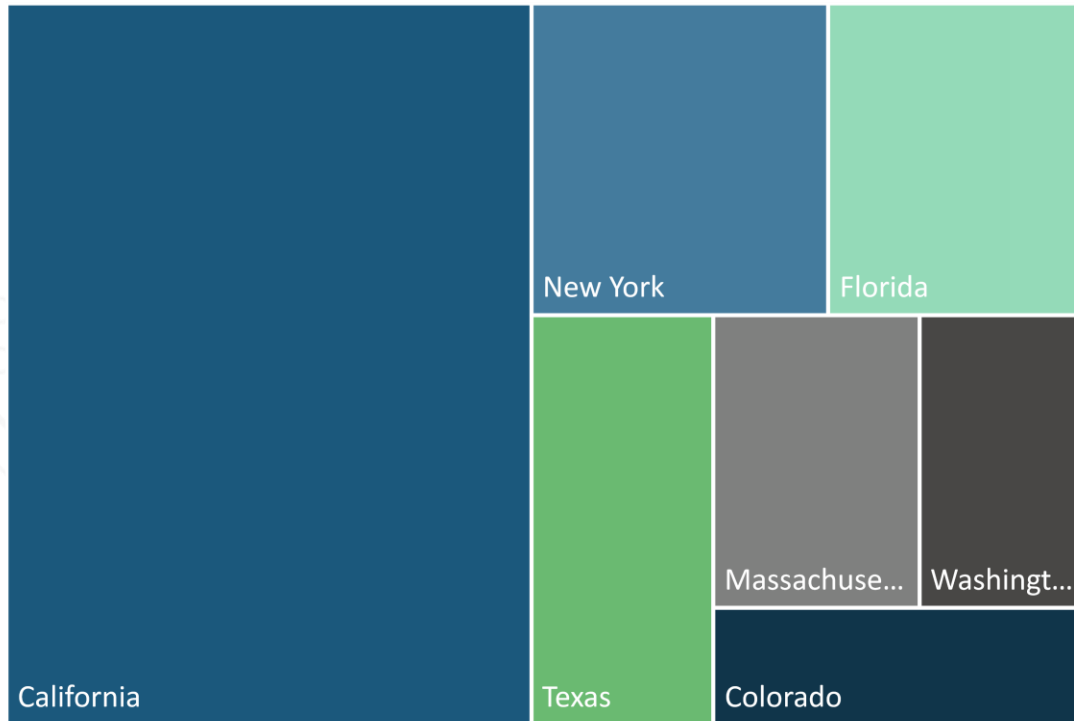
# US State Trends



The policies set by the current US government will play a key role in the development of the US EVSE market

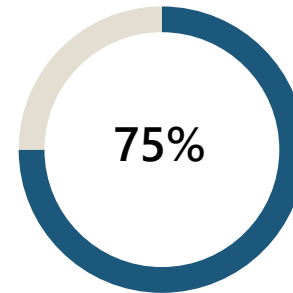
## Public EV charging points - 2023

- California
- New York
- Texas
- Florida
- Massachusetts
- Washington
- Colorado



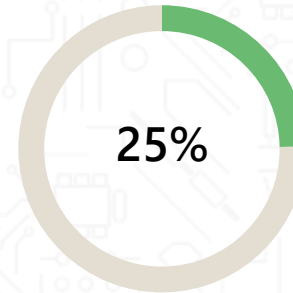
## Top States

The top 15 states account for around **75%** of all EV charging stations in the country, making them a critical focus for industry players and policymakers.



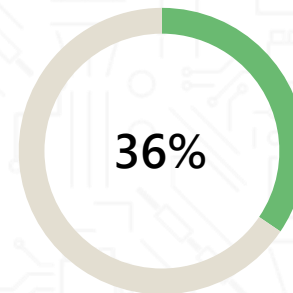
## California

**25%** of public charging infrastructure in US is installed in **California**. The state also boasted **32%** market share off total **EV sales** in the US.



## Advanced Clean Cars -II

ACC-II aims for **100% zero-emission vehicles** (ZEVs) in light-duty vehicles (LDVs) by **2035**. This initiative begins with a **36%** sales requirement in **2026** in specific U.S. states, including NY, VT, MA, WA, and OR.



# Policies, Incentives & Technology Trends

- EV charging policies & incentives
- Emerging technology trends

# 03

# EV Charging Policies & Incentives - USA



Utilities and local governments play a vital role in EV adoption through EV charging investments and incentives

## Bipartisan Infrastructure Law

\$7.5 Billion to fund and build a network of charging stations across USA

### Utility Investments

Utilities offer an array of rebate programs and incentives for public, workplace and shared private charging

### Residential EVSE Rebates

Residential customers can avail discounts on networked EVSE hardware and/or installation costs

### Commercial/MUD Rebates

Chargers installed on commercial, or MUD properties can avail rebates on installation of networked chargers

### Time-of-use Discounts

Discounted electricity rates for charging during off-peak periods

### State Policies

Plans & policies from states to setup EV charging infrastructure. Pro

### Community Programs

Utilities, OEMs and local governments working to setup charging infrastructure in underdeveloped / disadvantaged communities

### Fleet Electrification

Incentives and rebates available for setting up charging infrastructure for school transportation, MDV, and HDV applications.

## EV Charging Initiatives & Incentives USA

# Emerging Trends



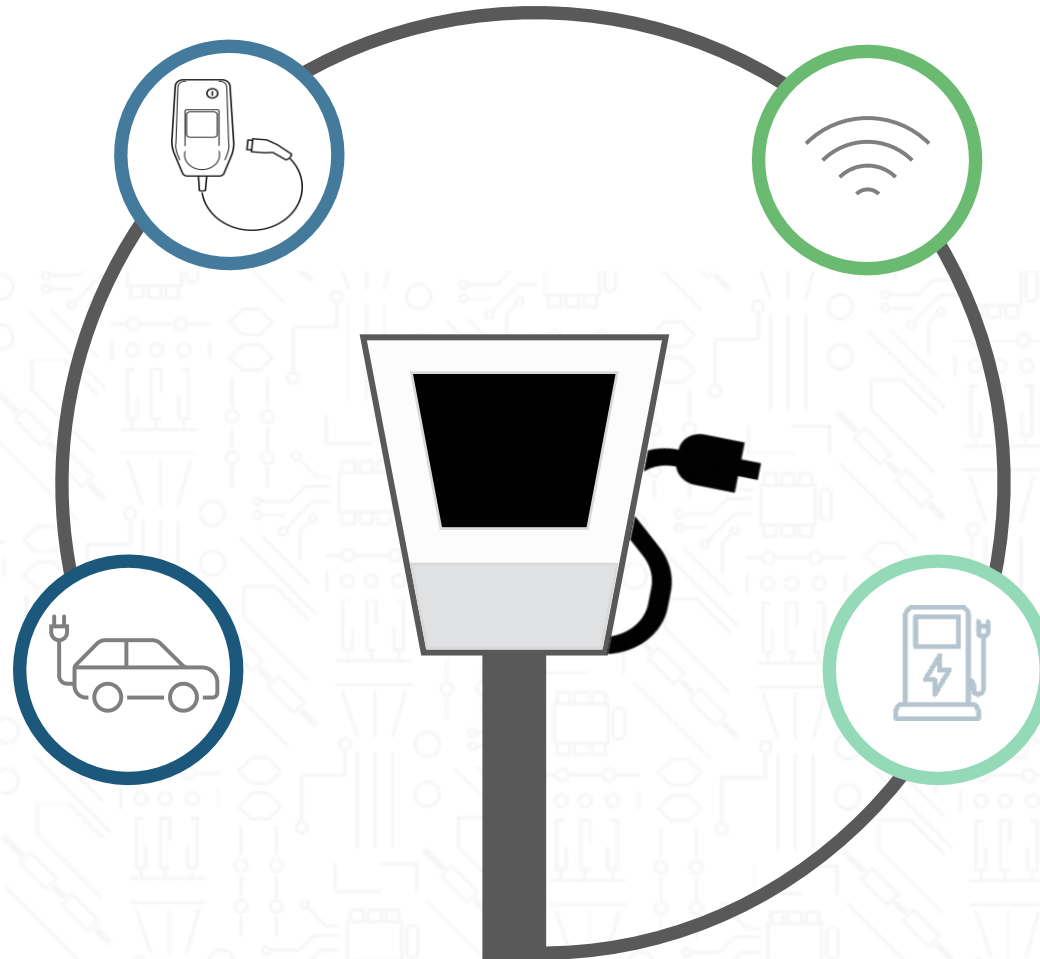
## Top 4 Technology Trends to Look Out for in 2024

### 1. Vehicle-to-Grid (V2G)

- 20+ EVSE manufacturers providing V2G chargers.
- Development in the AC V2G chargers' market

### 2. Battery Buffered EV Charging

- Minimizes the impact on the grid.
- Charging at higher power levels.
- Solution providers: FreeWire, Ads Tec Energy Nerve Smart Systems, etc.



### 3. Wireless Charging

- Static wireless charging for residential and commercial use
- Major OEMs, such as Tesla and Siemens, have shown interest
- Standards only for <11 kW

### 4. Megawatt Charging System (MCS)

- Charging speed of up to 3.75 MW.
- High-speed charging for heavy-duty vehicles.
- Standards expected to come out in 2025

# PTR's EVCI Market Research

Analysis of the EV & EV Chargers market around the globe



## EVCI Hardware Market

- Installed and Annual Market forecast in Capacity, Application, and Owner's views from 2020-2030 (Units, Revenue)
- Public Policies and Plans
- Charger Pricing
- Market Shares, Top Suppliers
- Presentation of data in the PowerBI platform

## EVCI Ancillary Services Market Report

- Installed and Annual Market forecast from 2020-2030 (Units, Revenue)

## EVCI Software Service Market Report

- Installed and Annual Market forecast from 2020-2030 (Units, Revenue)

## EVCI Market Competitive Analysis Report

- Mergers & Acquisitions (M&A)
- Company Profiles of 20 leading EVCI OEMs

## PTR Sonar EVCI

- Weekly updates on key market happenings
- Proprietary desktop/mobile app

Learn more about our :

## EV Chargers Market Research

