

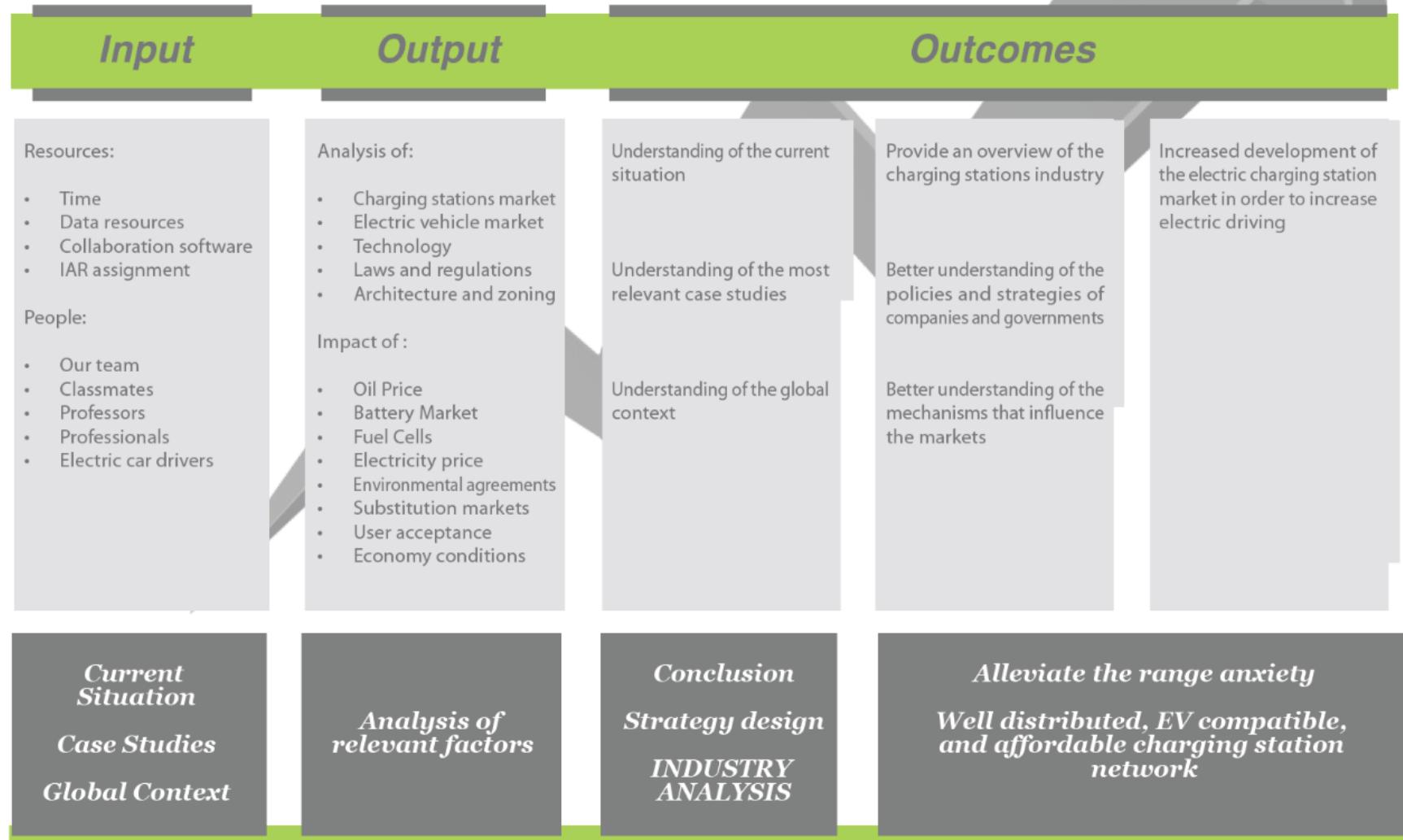
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LEADER IN ENVIRONMENT ANALYSIS AND DEFINITION OF STRATEGY

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Logic Model





Charging Station Market

EVs Market

Technology

Architecture & Zoning

Laws & Regulations

Current Situation

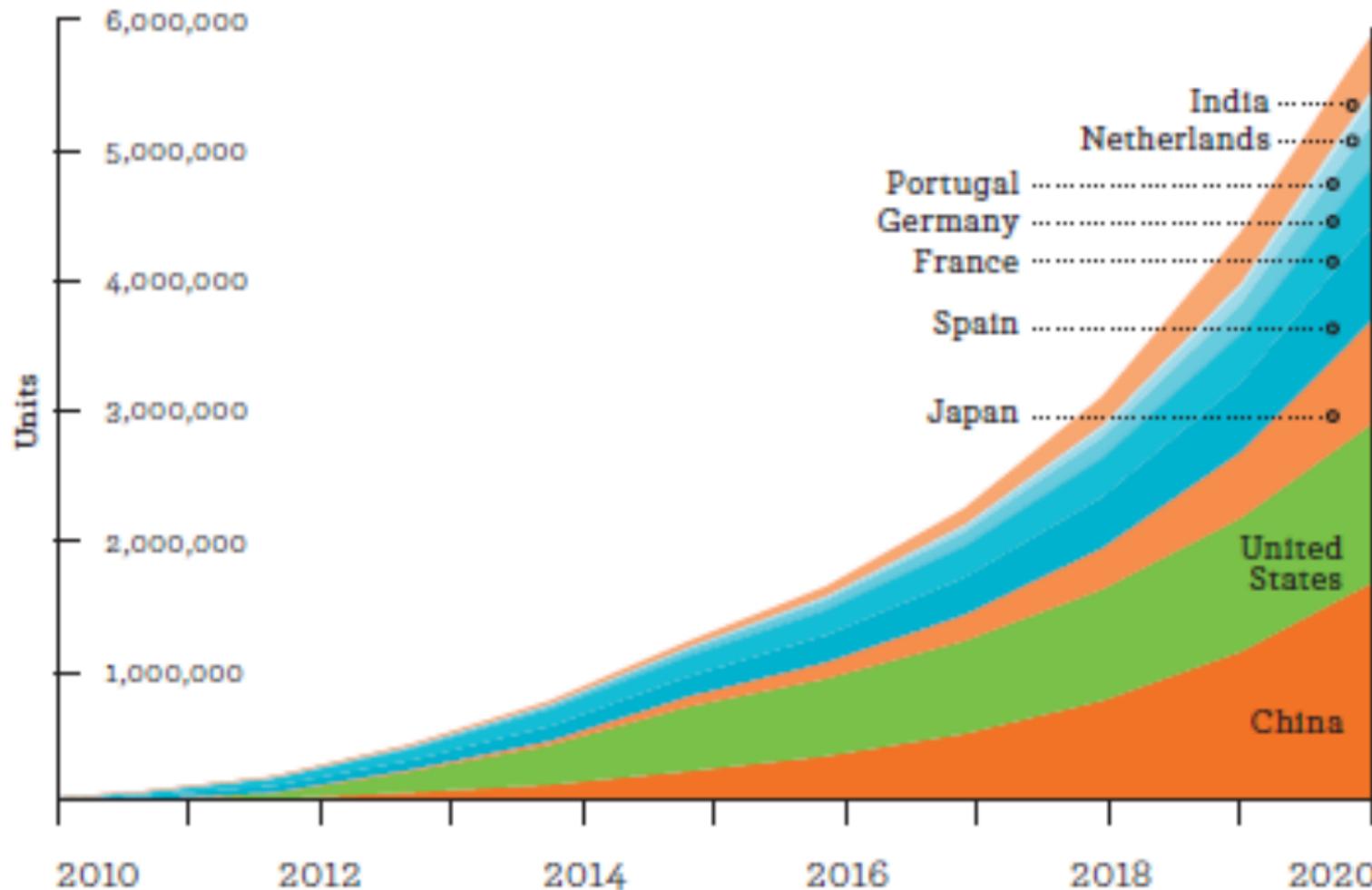
Estonia



California

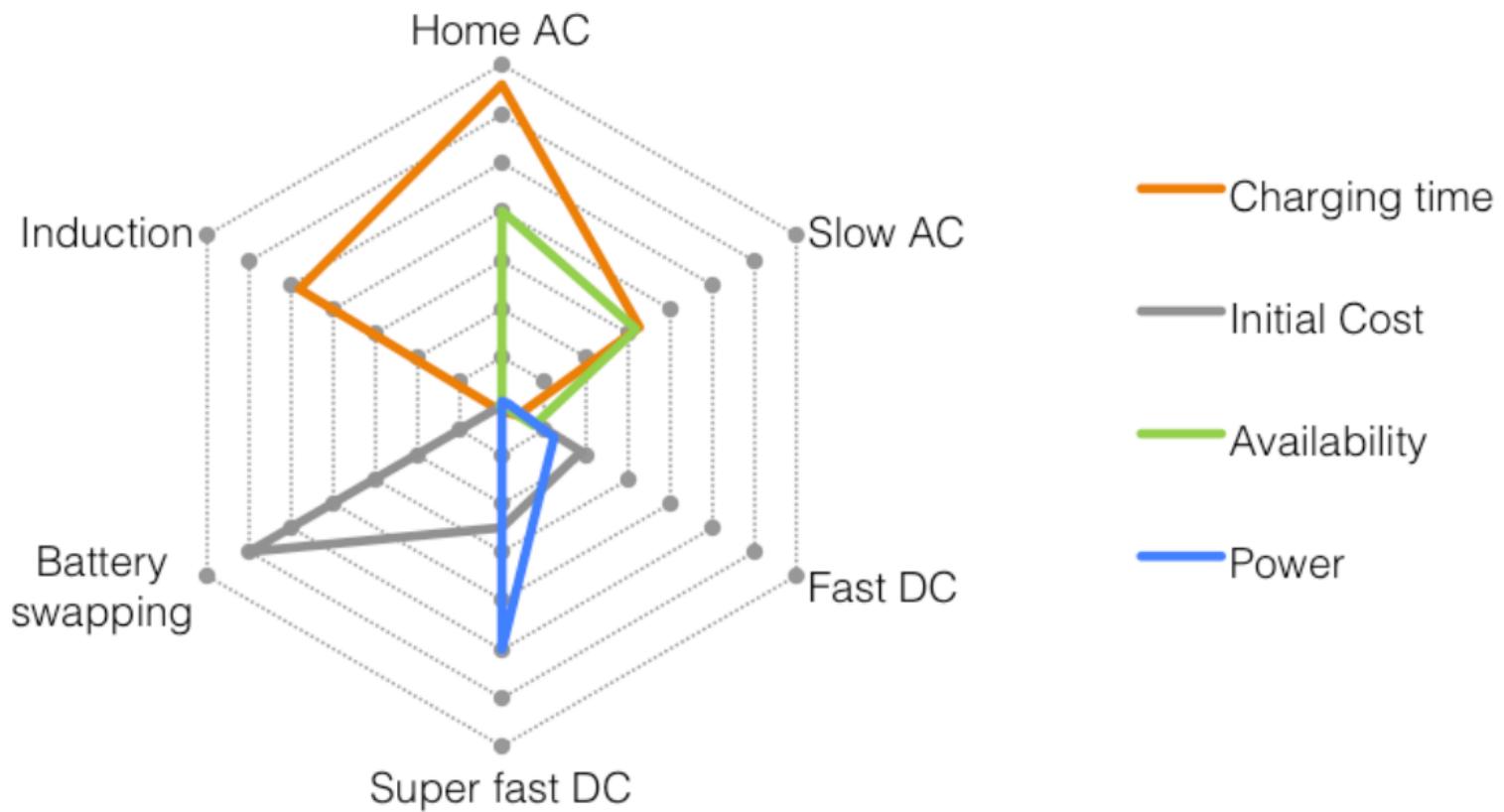
Governments

EV Market: EV Sales Targets



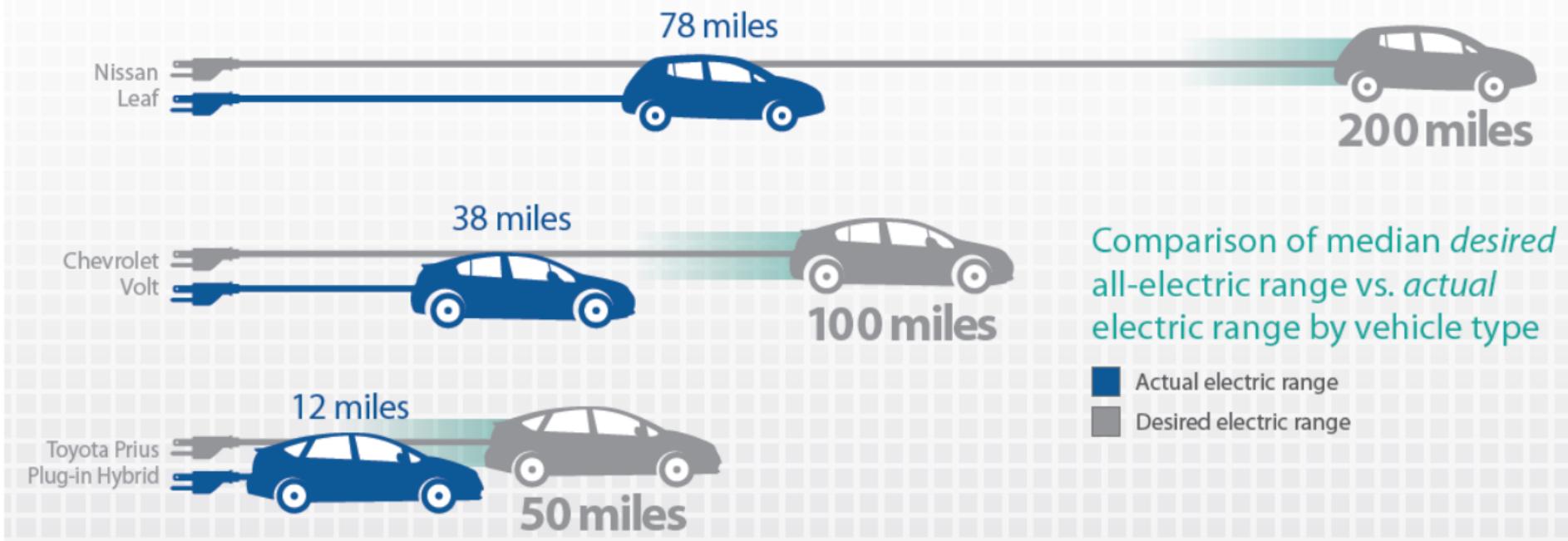
EVs sales have been growing for the past 5 years, and the market is predicted to continue its exponential growth

Technology: Attributes of different charging methods



Charging Methods are many, and each present very different characteristics. Super Fast DC is one of the best technology existing.

Architecture & Zoning: Comparison of Median desired EV range vs. actual range



Range Anxiety is one of the main factor slowing the growth of the EV Market

Architecture & Zoning

Laws & Regulations

Estonia
California

ChargePoint
CHADEMO
Better Place

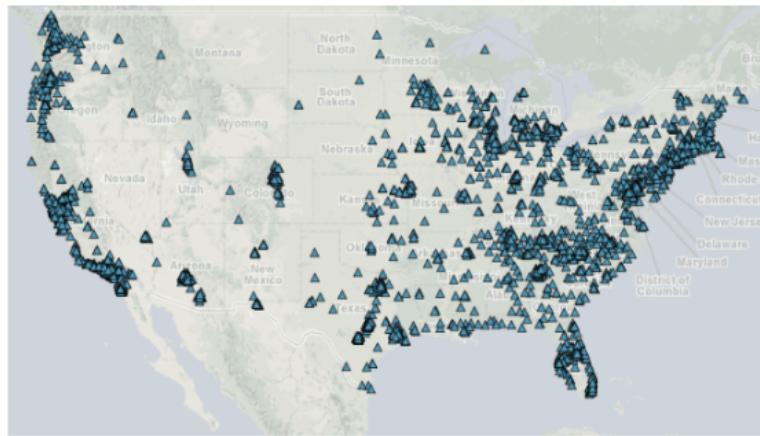
Governments

Companies

Case Studies

Indu

Case Study 1: California



Map of Charging Stations location in the US

Case Study 2: Estonia



Map of Charging Stations location in Estonia

Case Study 3: Successful Company



Case Study 4: Successful Association



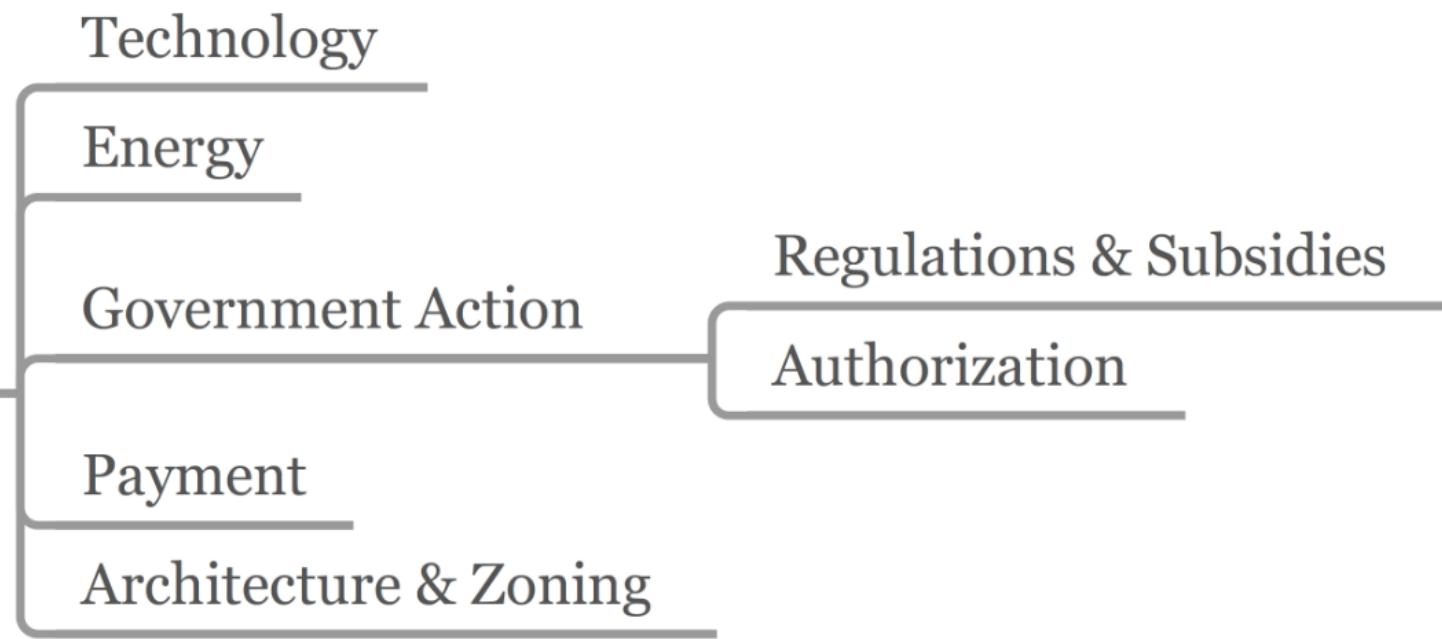
CHADEMO

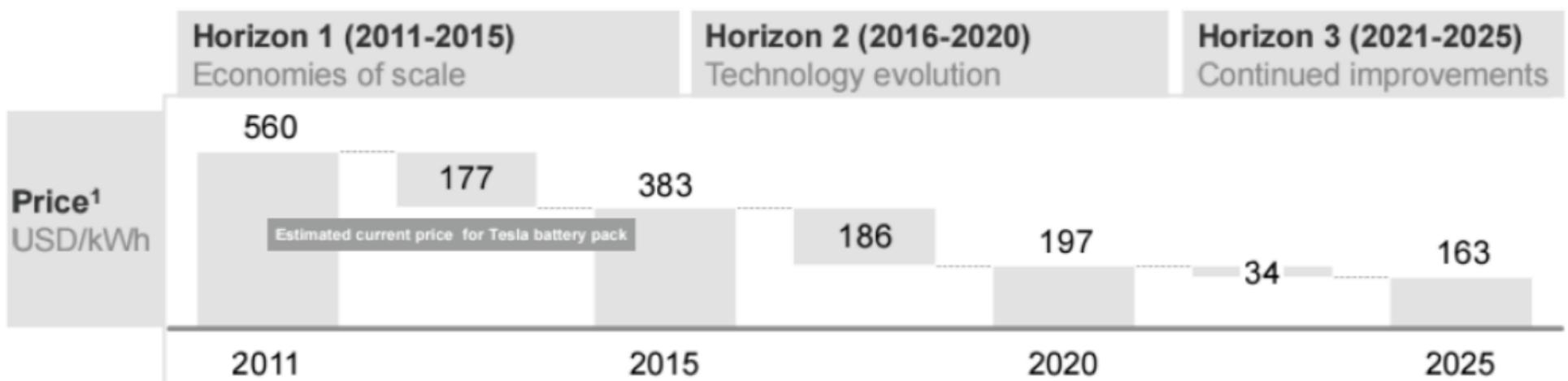
Case Study 5: Unsuccessful Company

better place



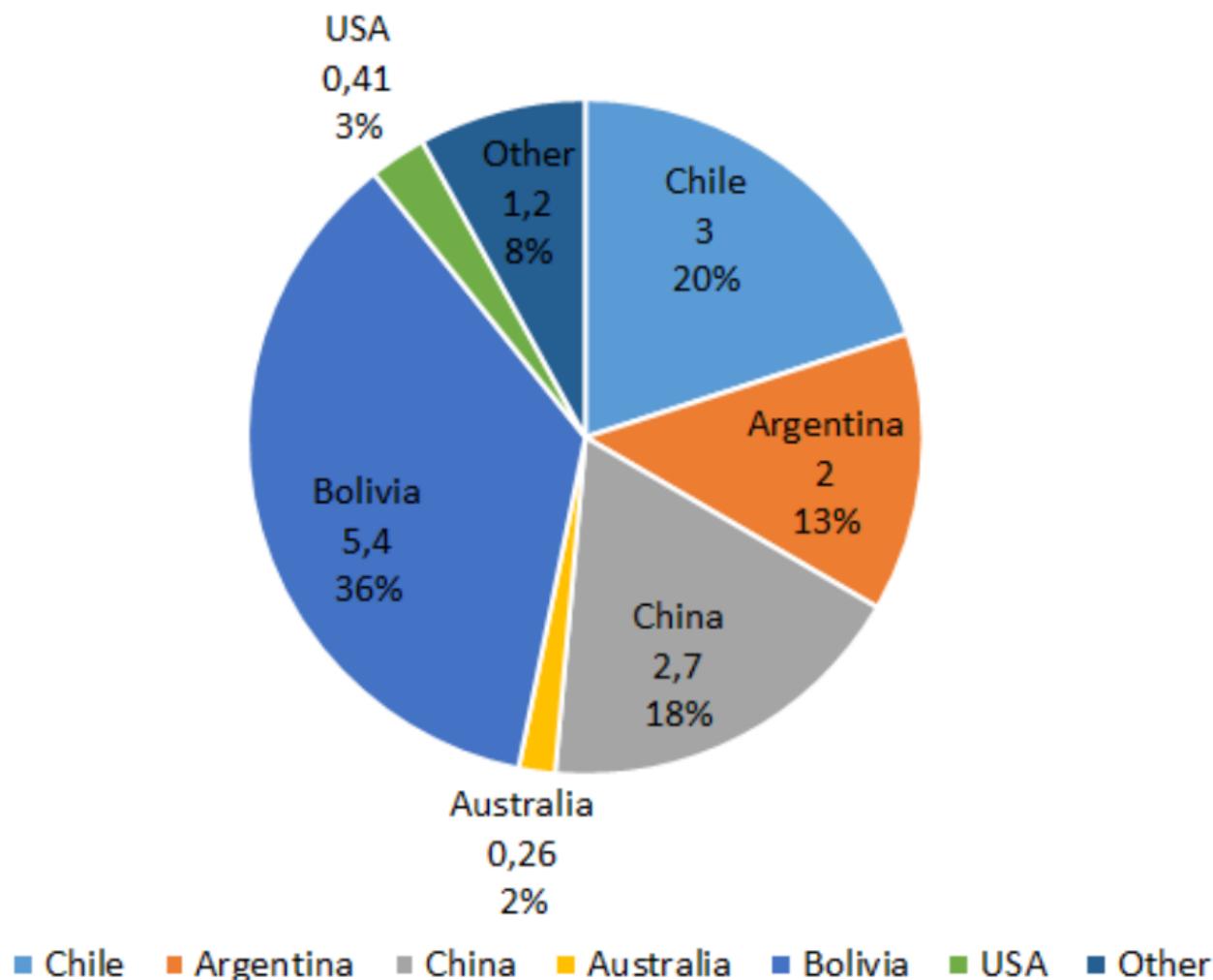
Relevant Factors





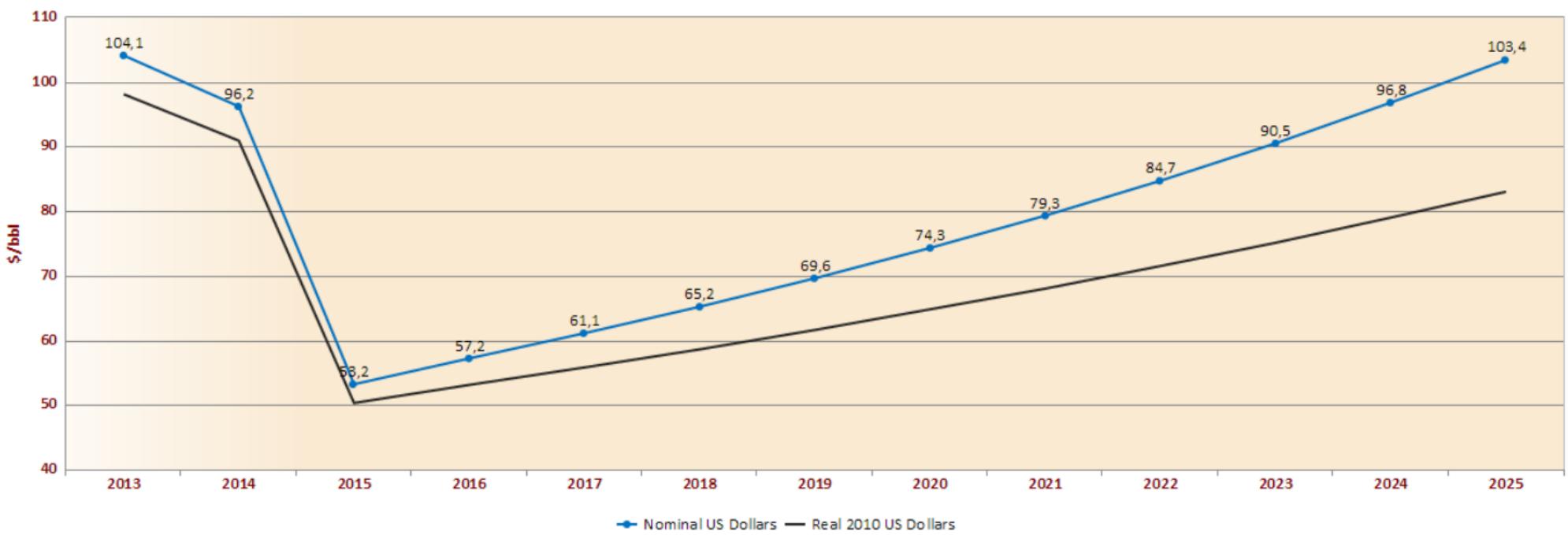
Expected Price Evolution of Battery Delivered Electricity

Technology: Lithium Reserve Base (in MM tons)



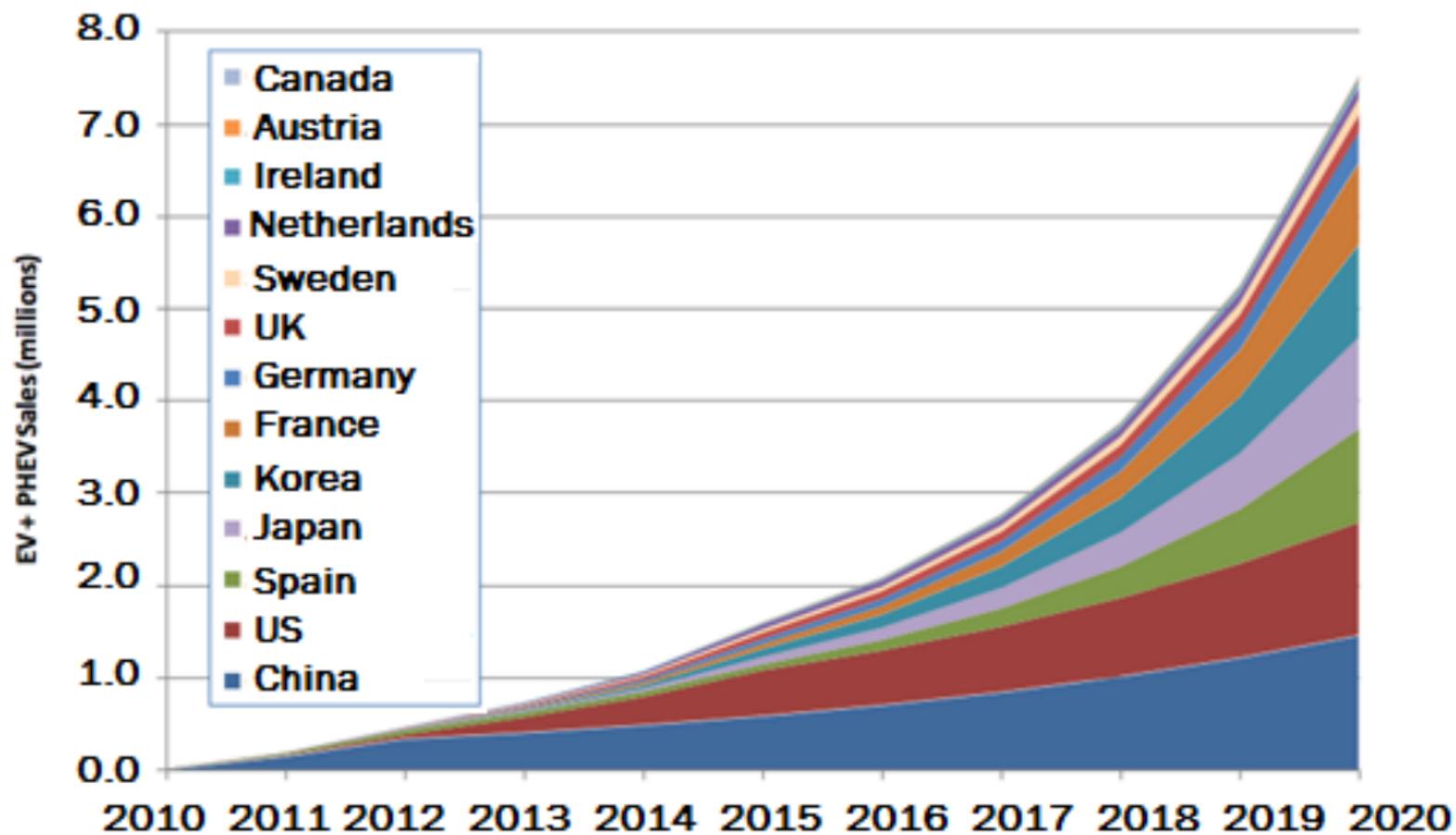
A major risk in the new battery technology is the possibility of limits in Lithium resources

Energy: Crude oil, \$/barrel (World Bank)



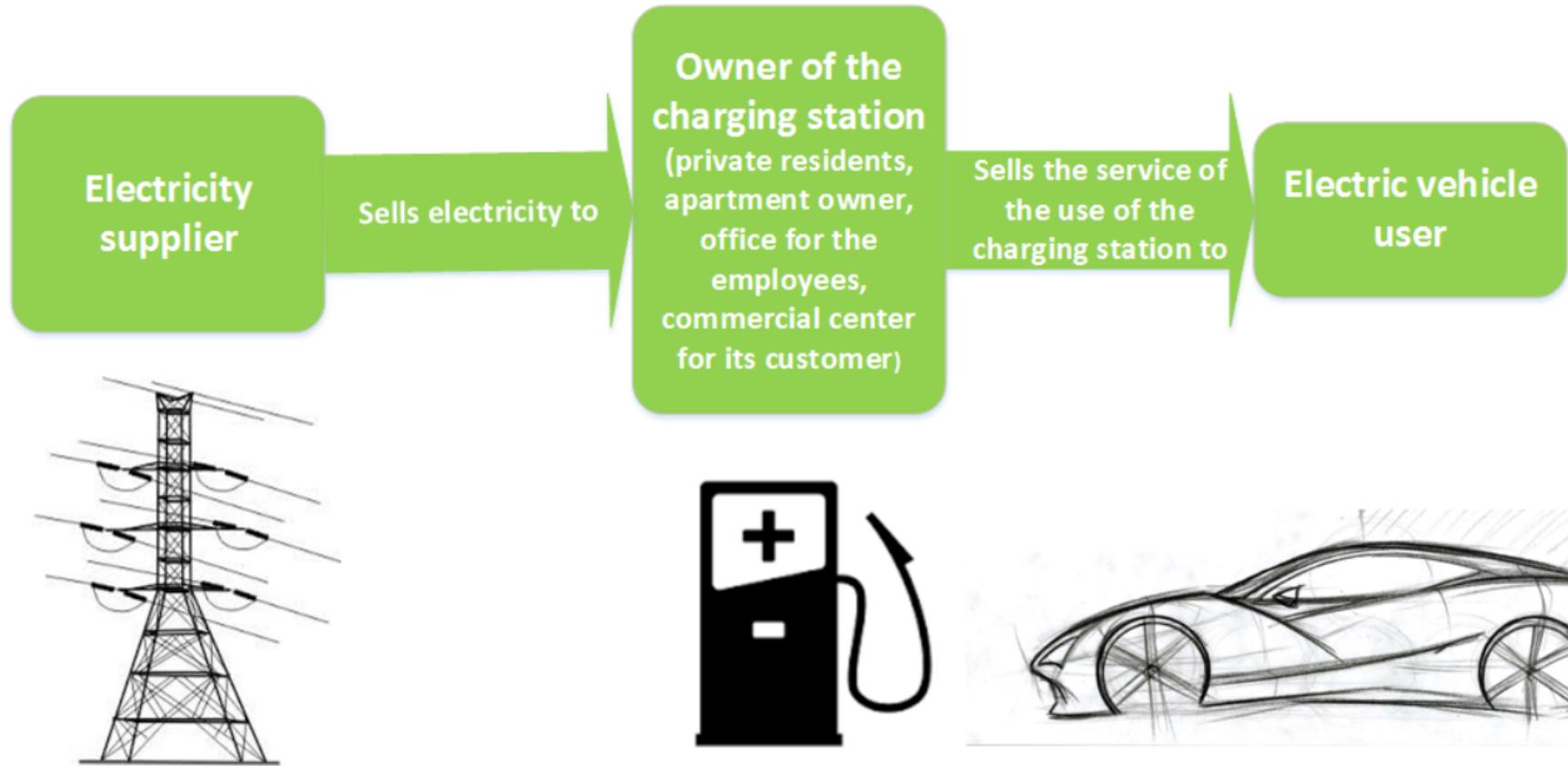
The expected rise in crude oil prices in the 10 years to come is very likely to favorize the EV Market

Government Action: Projected EV and PHEV sales through 2020, based on announced national targets



National and International Environmental Goals are one of the most efficient incentive for governmental action

Authorization: Stakeholder authorization process



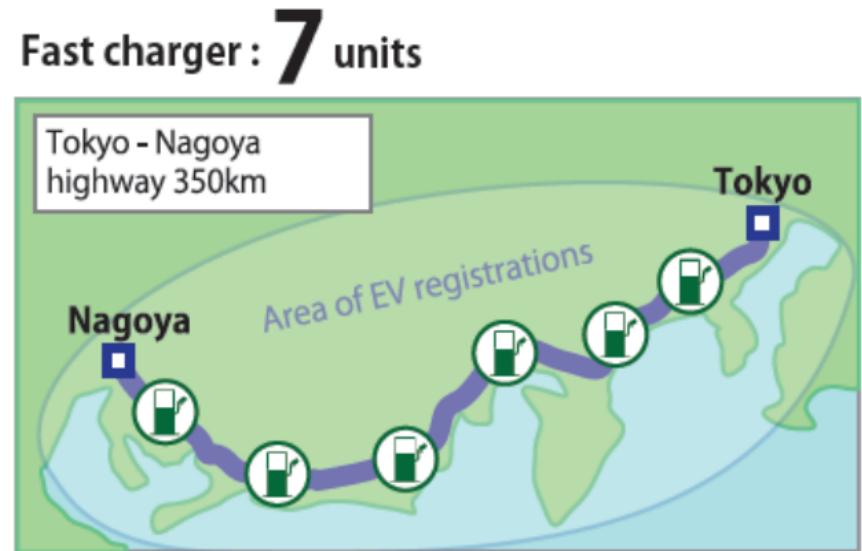
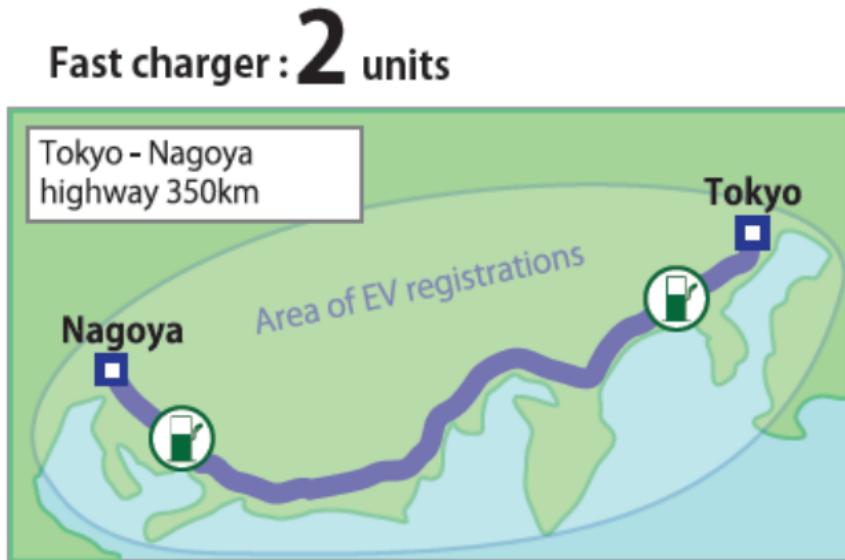
Many actors are involved in the process of installing and selling the service of charging stations. Complications can occur in high density cities (problem of apartment owners)

Payment: The use of smartphone is one aspect of the use of new technologies in the EV Market



The payment system is actually not standardized between the different actors. The use of online payment system is important to be visible and attract customers.

Architecture & Zoning: Impact of implementation of Charging Stations on the Tokyo-Nagoya Highway



19% of EV drivers used the highway



46% of EV drivers used the highway

This example shows the importance of a supporting Charging Station Infrastructure in the use of EVs and roads.

Conclusion & Final Strategy

Conclusion

The electrification of the global vehicle fleet is a long-term ambition.

The technological and industrialization pace is fast, unlikely to slow down the market expansion.

Still, uncertainties and risks remain, for example: market competition, consumer perception and technology choices

Close collaboration between government and companies is key to success in the market.

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Strategy

SHORT TERM

LONG TERM

| Energy | Increase awareness on risks of oil usage | Promote and favorize academic research about EV Charging |
|--------------------|---|---|
| Laws & Regulations | Attract governments' favors, impose own standards | Enter subsided markets, find new incentives for customers |
| Technology | Secure essential materials supplies, increase efficiency and standardize technology | Research on new methods and materials to power engines, ensure maximum smart-grid compatibility |
| Zoning | Promote fast charging and guarantee network coverage | Aim for highway coverage and target real-estate owners |
| EVs | Increase battery performances, enter the rental market | Consider the risk of lithium shortage and research on alternative solution |

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