

SIMAC

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AGENDA

Project Overview

Methodology

Project Partners

The Road to Sustainability

Types of EV Chargers at a Glance

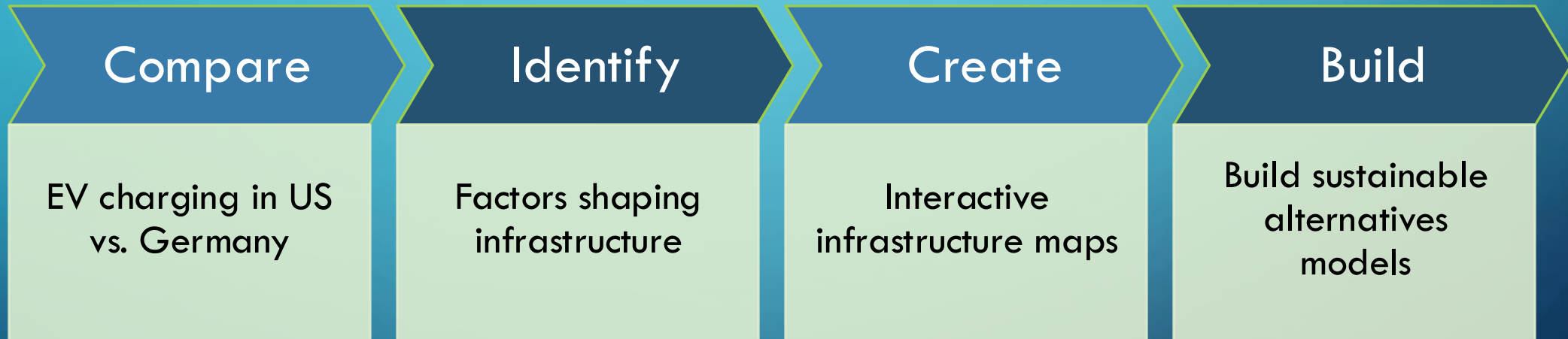
PESTEL Analysis

Website Demo

Models

Key Takeaways

PROJECT OVERVIEW



METHODOLOGY



- Develop project vision
- Develop team charter
- Literature review
- Mapping EV infrastructure
- Field research
- PESTEL analysis
- Risks and Opportunities
- Solar and Wind maps analysis
- Potential alternatives
- Project plan for in-person phase
- Website
- Company Visit (Aptiv)
- Develop alternatives models
- Summary of findings
- Website and presentation

PROJECT PARTNERS



- Innovative engineering solutions and product development

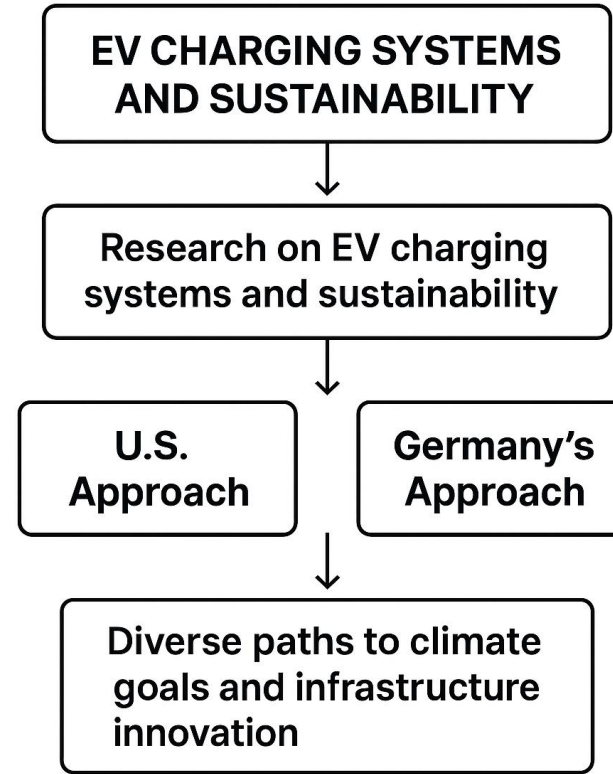


- A leading manufacturer of soft magnetic materials and components



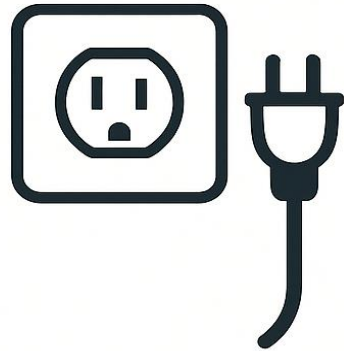
- A global leader for mobility solutions and automotive innovation

"Our project focuses on sustainability in EV charging systems, comparing how the U.S. and Germany approach climate goals and infrastructure innovation."



TYPES OF EV CHARGERS AT A GLANCE

Level 1 – Standard Outlet



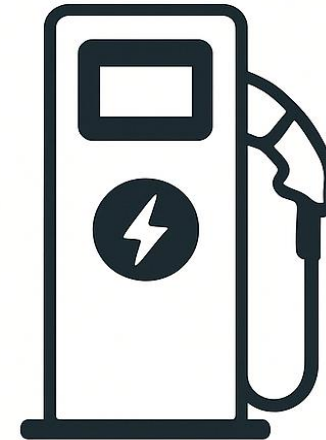
**Slowest option
(full charge may
take 24+ hours)**

Level 2 – Home & Public AC Charger



**Charges in roughly
4–8 hours**

Level 3 – DC Fast Charger



**Charge to 80% in 20–40
minutes**

VISION (BY 2030):

UNITED STATES – NEVI PROGRAM

- **500,000** public DC fast chargers
- **Goal: Every 50 miles** on key highways
- **Priorities:**
 - **Fast deployment**
 - **Fair access**
 - Supports **multiple connectors**

GERMANY – MASTERPLAN LADEINFRASTRUKTUR II

- **1 million** public chargers
- **Goal: charging as easy as petrol refueling**
- **Priorities:**
 - Urban & suburban expansion
 - **Smart grid** integration
 - Follows **EU charging standards**

Political

Germany:

- Centralized, EU-aligned system
- One national plan with funding tied to climate targets
- Focus on renewable energy integration

United States:

- Decentralized model
- Priorities highway connectivity
- Faces policy shifts

Economic

Germany:

- Import dependency
- Skilled labor shortages
- Policy-driven market swings as main cost pressure

United States:

- Import dependency
- Skilled labor shortages
- Cost pressures from import tariffs
- Varied state electricity costs

Socio-cultural

Germany:

- High support for EVs but many still prefer traditional cars
- Main challenges:
 - Strong car culture
 - Limited EV access in rural areas

United States:

- Quicker EV adoption in progressive states, slower in rural and conservative states
- Main challenges:
 - Changing policies
 - Uneven charging access

Technological

Germany:

- Standardized charging system with nationwide compatibility
- Strong renewable energy integration
- Advanced features like Plug & Charge and V2G trials
- Progress guided by strict EU technical and infrastructure plans

United States:

- Market-driven charging network with multiple standards
- Shaped by private companies and state-level pilot programs
- Focus on speed and flexibility
- Inconsistent Interoperability between networks

Environmental

Germany:

- Policy-led green strategy
- EU-wide 2035 ban on new gas cars
- Mandatory renewable power for chargers
- Consistent nationwide efforts

United States:

- No national gas vehicle phase-out
- Grid still heavily reliant on fossil fuels
- Clean energy progress varies by state
- Progressive states lead with ambitious mandates

Legal & Data Protection

Germany:

- Follows strict, uniform GDPR rules
- Clear consumer rights
- Strong data protections
- Tough penalties for violations

United States:

- Patchwork of state-level data protection laws
- Strength of protections varies by state
- Consumer rights depend on location
- Enforcement varies by operator policies

WEBSITE DEMO



CONCLUSION

- Similar Goals but distinct approaches
 - U.S: Rapid, flexible deployment
 - Germany: Renewable energy and strict standards
- Purpose:
 - Provide key insights through deliverables
 - For partners to make more sustainable decisions



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