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Presentation of research paper

Stand: May 2025

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E-MOBILITY in Road Transport

Stock · Strategies · Policies

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Outline

- Introduction
- Methodology
- Results
- Conclusions
- Recommendations for Future Research

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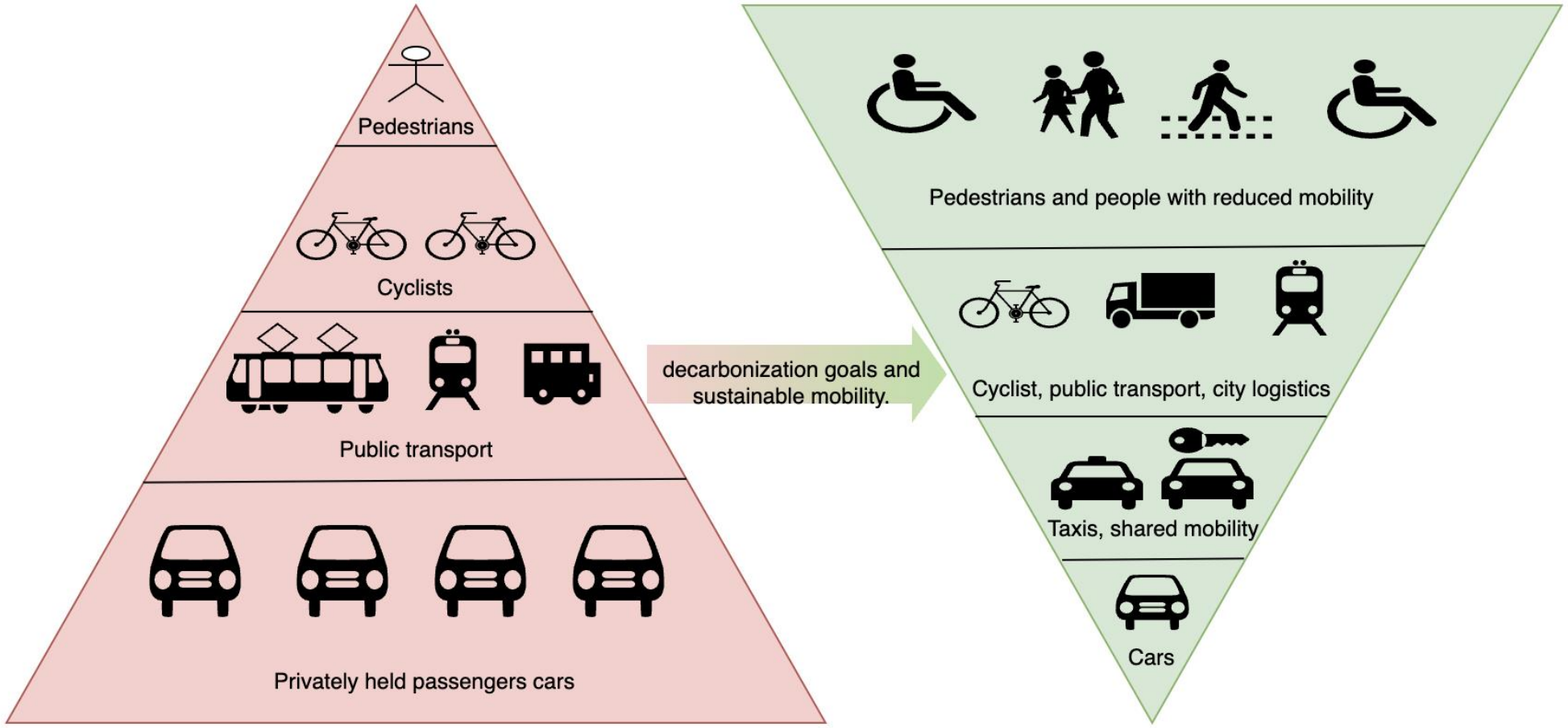
Introduction

- Background: Electrification of road transport = key to reducing emissions and improving air quality, addressing both environmental and economic challenges.
- Objective: This study compares e-mobility progress in Austria, Czech Republic, and the EU, focusing on electric vehicle stock, charging infrastructure, and policy measures.
- Importance: The transition to electric vehicles is vital for achieving EU decarbonization goals and sustainable mobility.


Pedestrians
Cyclists
Public transport
Privately held passengers cars
decarbonization goals and sustainable mobility.
Pedestrians and people with reduced mobility
Cyclist, public transport, city logistics
Taxis, shared mobility
Cars

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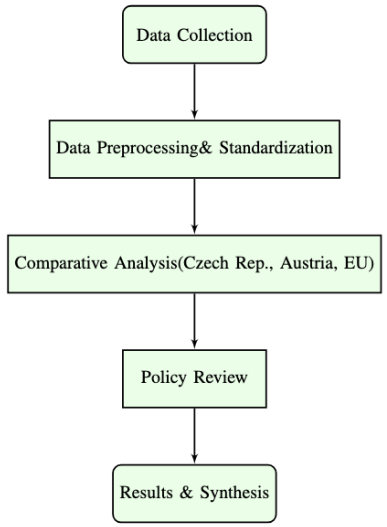
Methodology

- **Data Collection**: Gather data on EVs and charging stations.
- **Preprocessing**: Standardize and clean data.
- **Comparative Analysis**:Compare data for Czech Rep., Austria, and the EU.
- **Policy Review:** Examine the impact of policies
- **Results:** Synthesize insights from the analysis

Source	Coverage	Notes
Czech Transport Ministry	National EV stock	Annual registration data
Austrian Statistics Bureau	National EV Policies	Includes purchase incentives
European Environment Agency	EU-Wide EV Data	Aggregated data, reports
Industry White Papers	Charging Infrastructure	Vendor-specific information



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Results

A. Electric Vehicle Stock

B. Public charging infrastructure

C. Policy outcomes and market dynamics

D. Cross-modal insights

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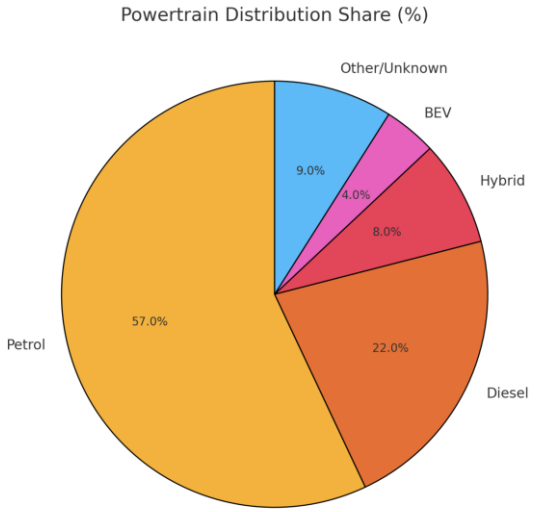
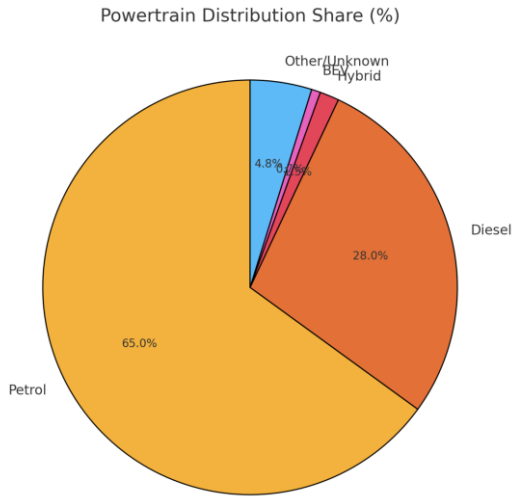
Electric Vehicle Stock

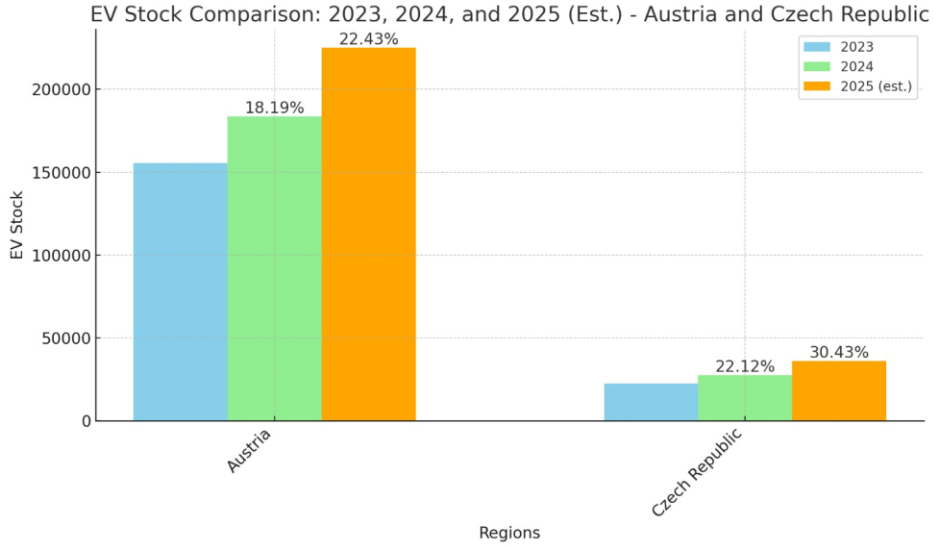
- The electric vehicle (EV) market has shown strong growth in Austria and the Czech Republic. Austria, in particular, has seen significant increases in the stock of electric passenger vehicles, with projections indicating continued growth over the next few years.
- Austria's BEV share is about 4% of the fleet, while the Czech Republic's is still below 1%, with both countries dominated by petrol and diesel vehicles.



Austria



Czech Republic



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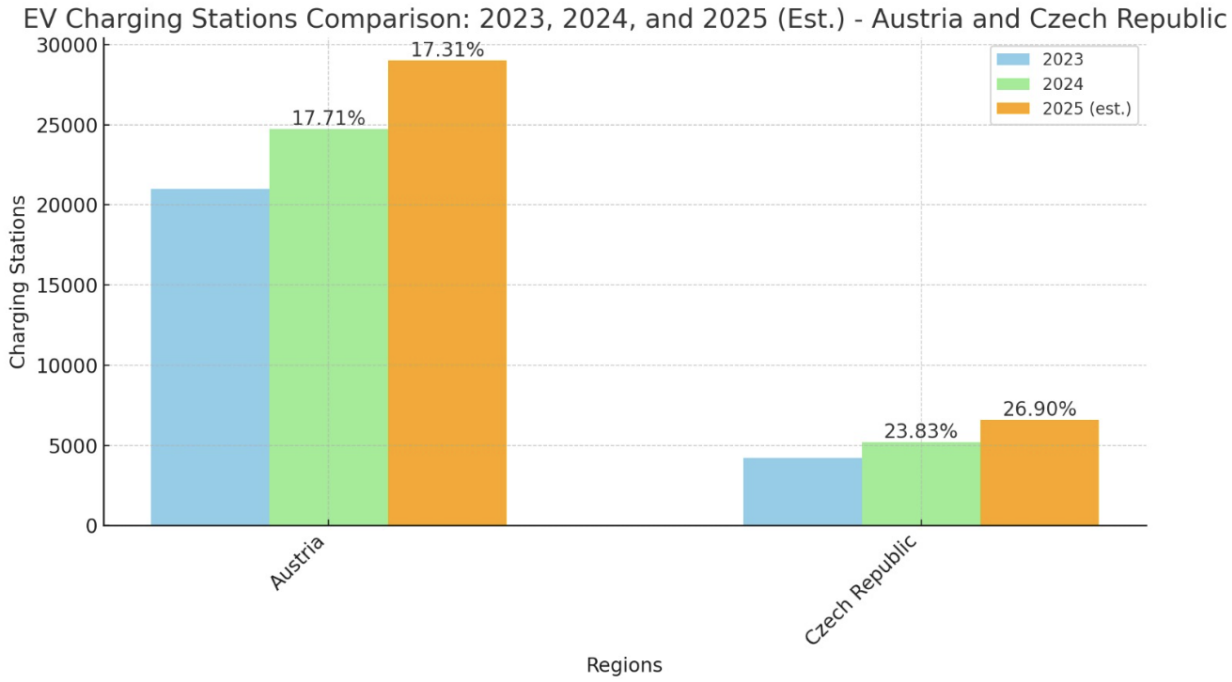
Public charging infrastructure

- **Czechia** now has more chargers per thousand BEVs than Austria and the EU, with 21% of points >150 kW DC.
- **Austria's ratio** is 1 charger for every 7.4 BEVs, exceeding the AFIR benchmark but needs improvement as EV sales grow.
- **Europe** passed one million chargers in Q1 2025, with a 54% year-on-year increase in DC installation



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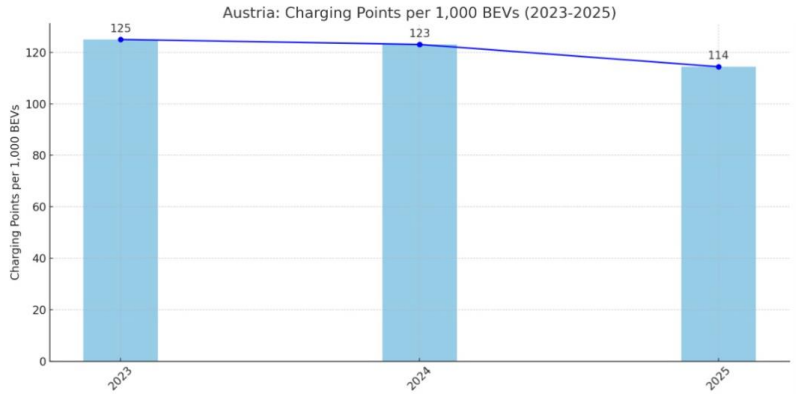

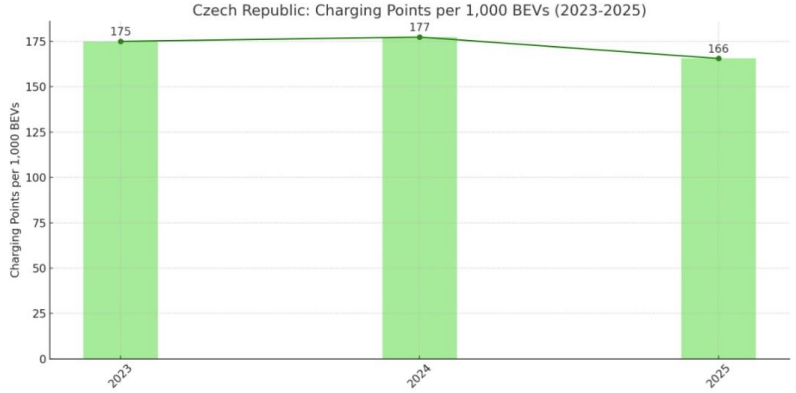

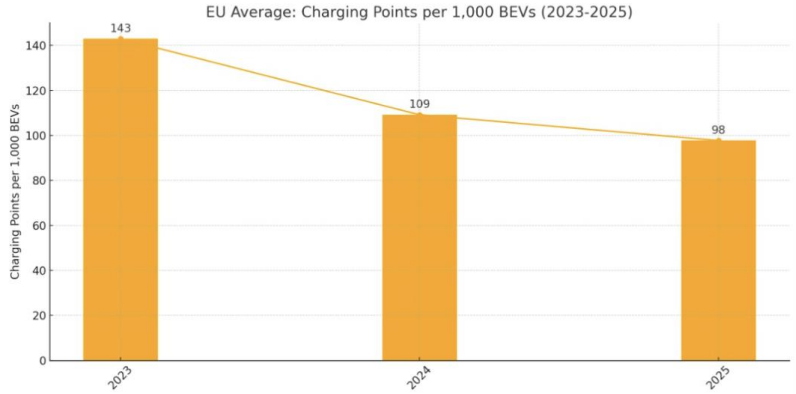

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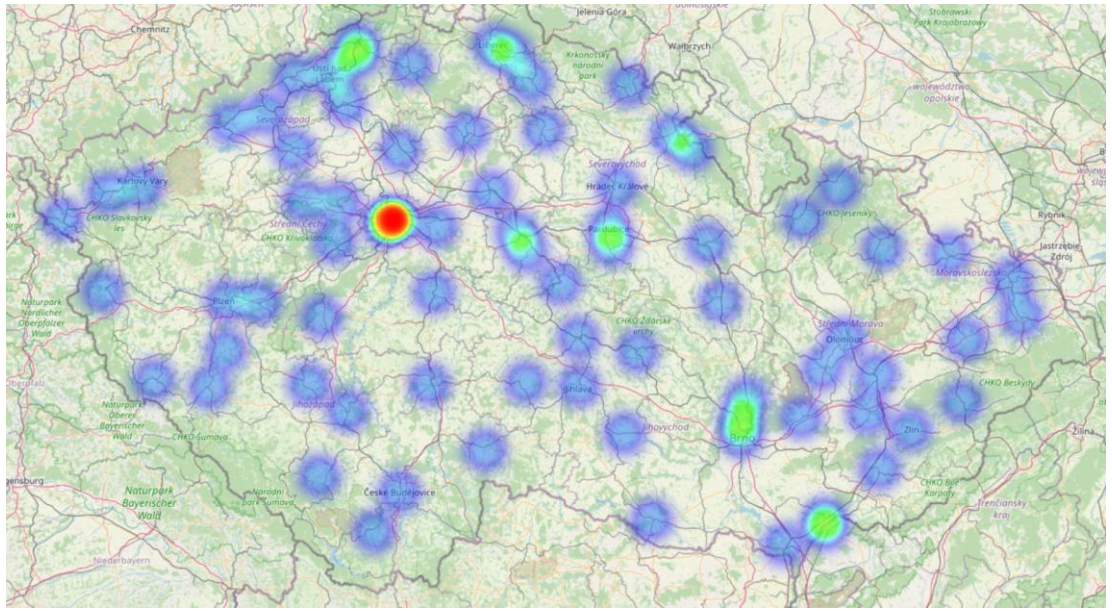
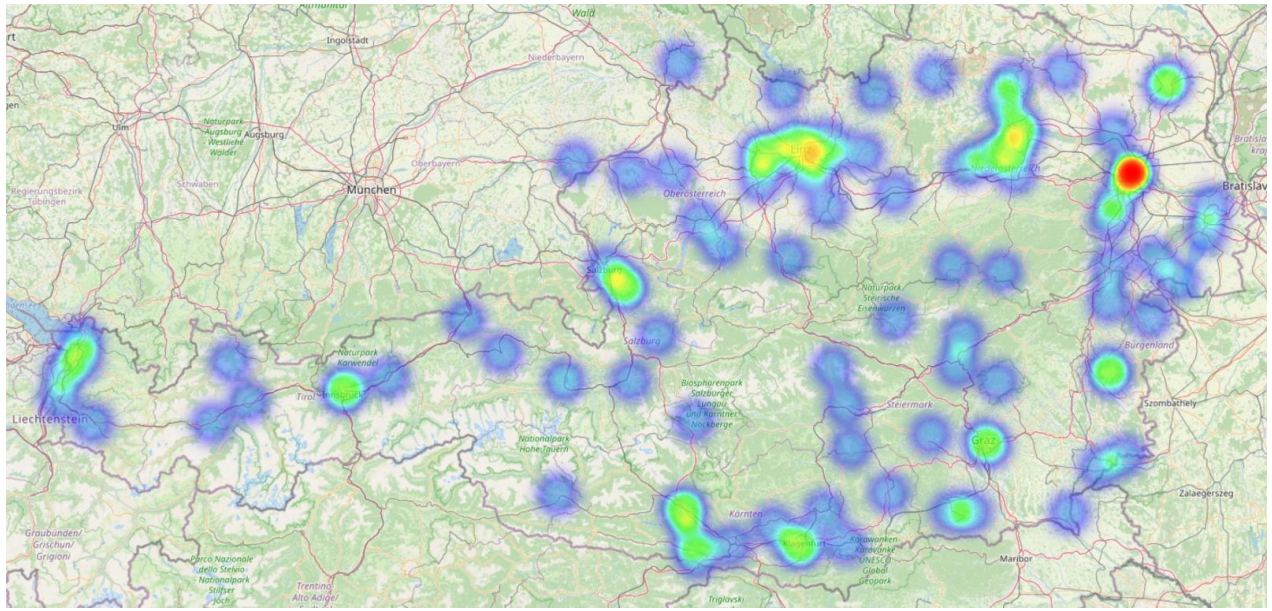
Analysis of the Heat Map





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Region	Austria	Czech Republic
Most Concentrated Areas	Vienna (Bright red spot), Styria, Upper Austria	Prague (Bright red spot)
Other Urban Areas	Graz, Linz, Salzburg	Brno, Ostrava
Rural Areas	Sparse in mountainous and rural regions	Sparse in rural and remote areas
General Distribution	High concentration around major cities	More evenly spread across regions
Need for Expansion	Expansion needed in rural and remote areas	Expansion needed outside of major cities
Growth in Fast Charging	Moderate increase in DC fast chargers	Gradual increase in DC fast chargers
Publicly accessible charging points (<23 kW normal, fast 23–150 kW, >150 kW ultra-fast)	**26,803**	**2,400**

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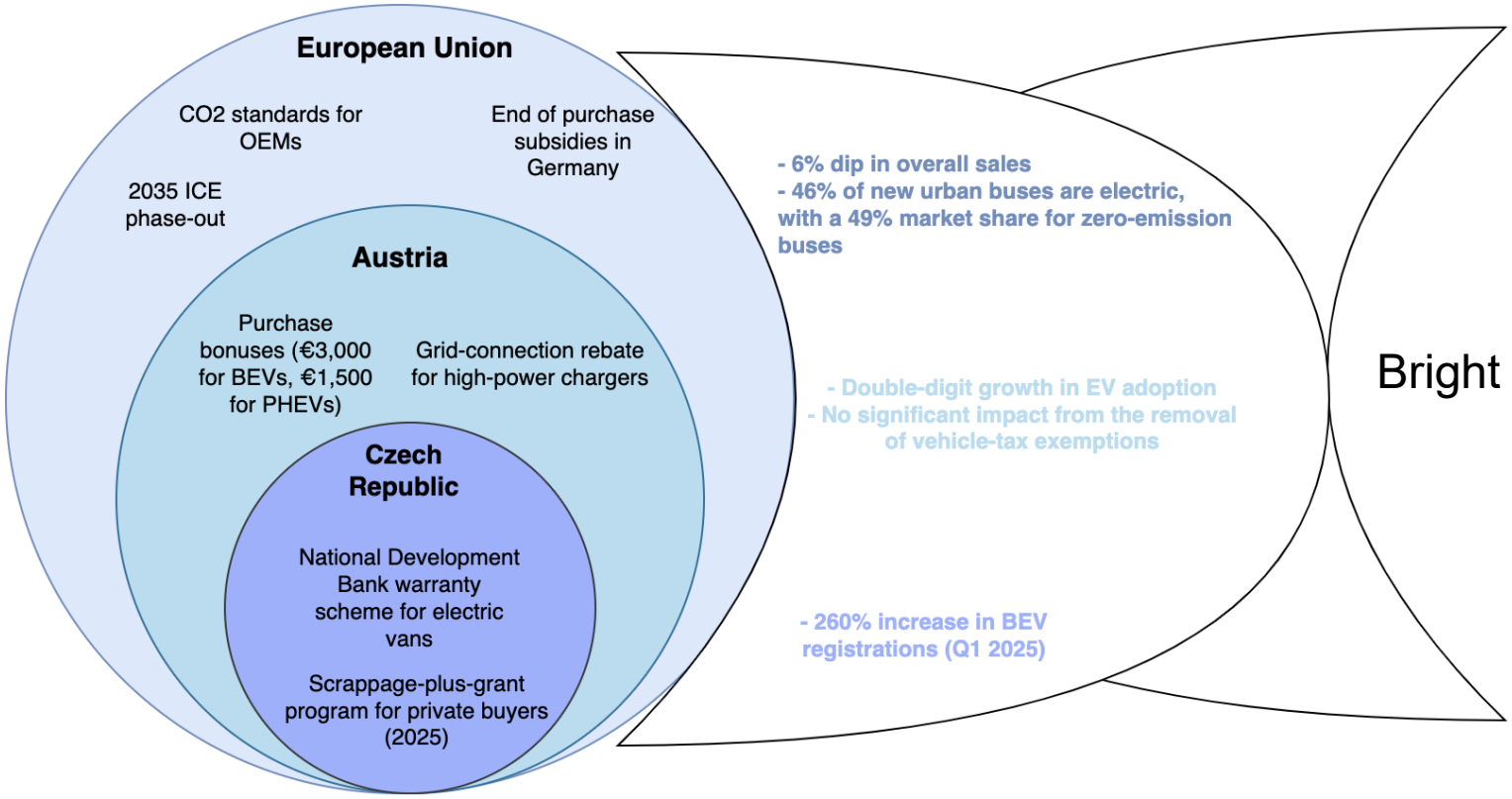
Policy outcomes and market dynamics



Bright Future? I DON'T KNOW

Policy outcomes and market dynamics

Light Commercial Vehicles (N1)

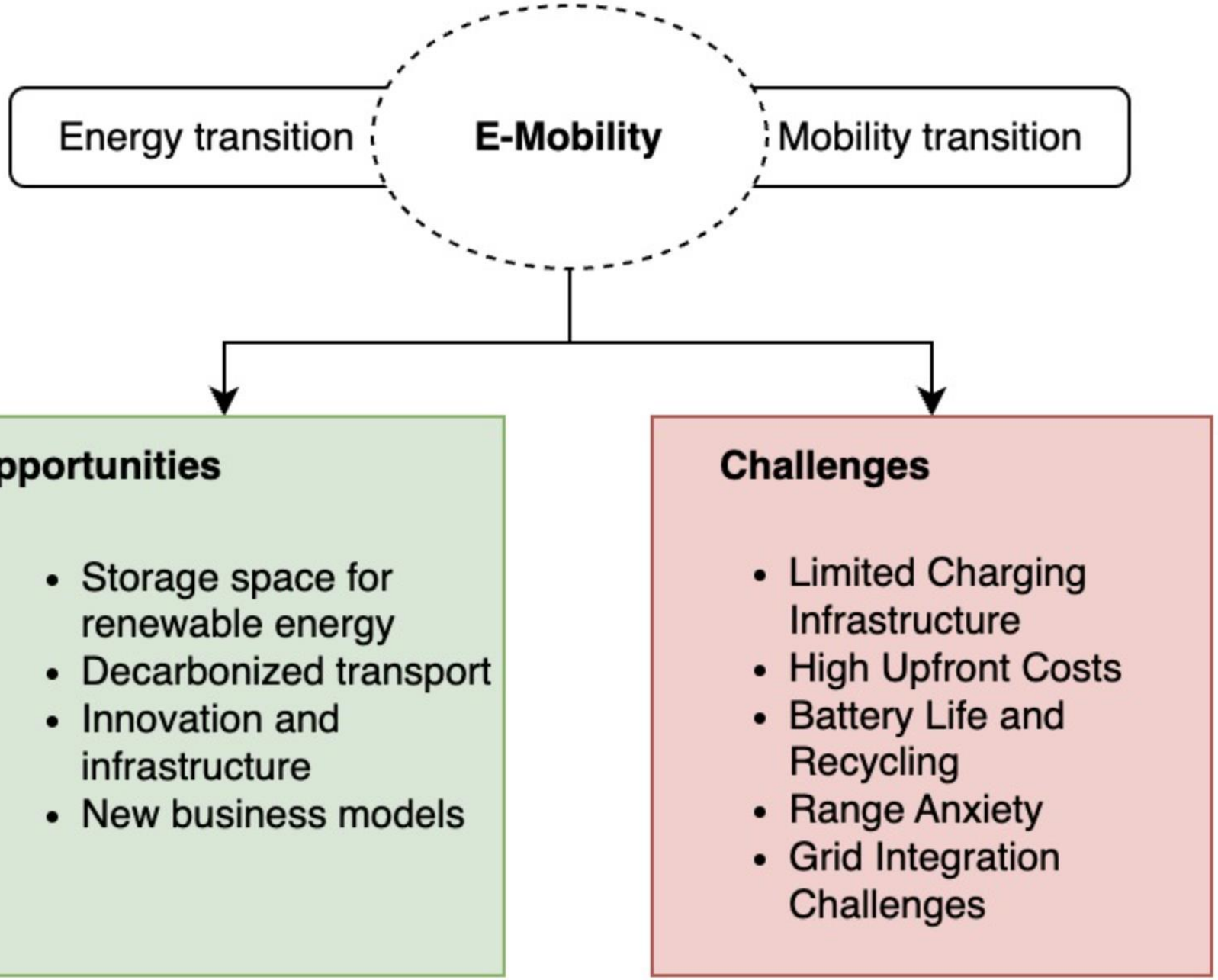
- **Austria:** remains ambitious with a target of 30% BEV vans in new sales by 2030, supported by charging-hub subsidies.
- **EU:** The BEV share in EU van registrations dropped from 7% (2023) to 6% (2024)

Buses (M2, M3)

- **Austria:** Added 56 BEV buses in 2024.
- **Czech Republic:** Ordered 110 articulated e-buses for delivery in 2025.
- **EU:** Momentum for zero-emission buses is strong, with nearly half of new city buses being battery-electric in 2024

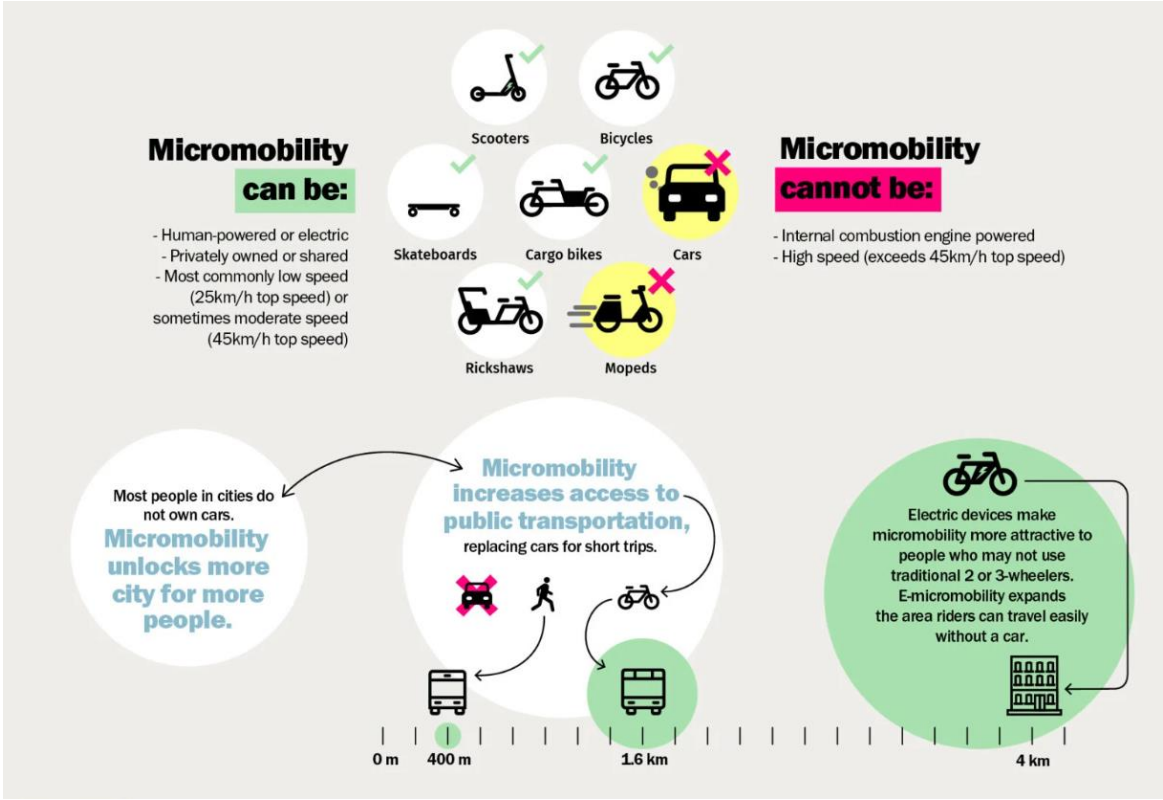
Heavy-duty Trucks (N2, N3)

- **Austria:** 217 units in operation.
- **Czech Republic:** Around 200 units in operation.
- **EU:** Fleets of heavy-duty trucks remain developing.


Energy transition
E-Mobility
Mobility transition
Opportunities
Storage space for renewable energy
Decarbonized transport
Innovation and infrastructure
New business models
Challenges
Limited Charging Infrastructure
High Upfront Costs
Battery Life and Recycling
Range Anxiety
Grid Integration Challenges

Key insights + Recomendations

- Incentives + infrastructure → highest adoption elasticity
- Provide multi-year fiscal-incentive visibility
- Czech fast-charge density offsets smaller fleet size
- Prioritise 350 kW+ chargers on TEN-T corridors
- EU sales dipped after subsidy withdrawal in Germany
- Feebate/mandate schemes for vans & trucks
- Up-skill workforce for EV technologies
- Main focus should be on public transport and micromobility like shared bikes, scooters and even cars



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FORSCHUNGSETHIK
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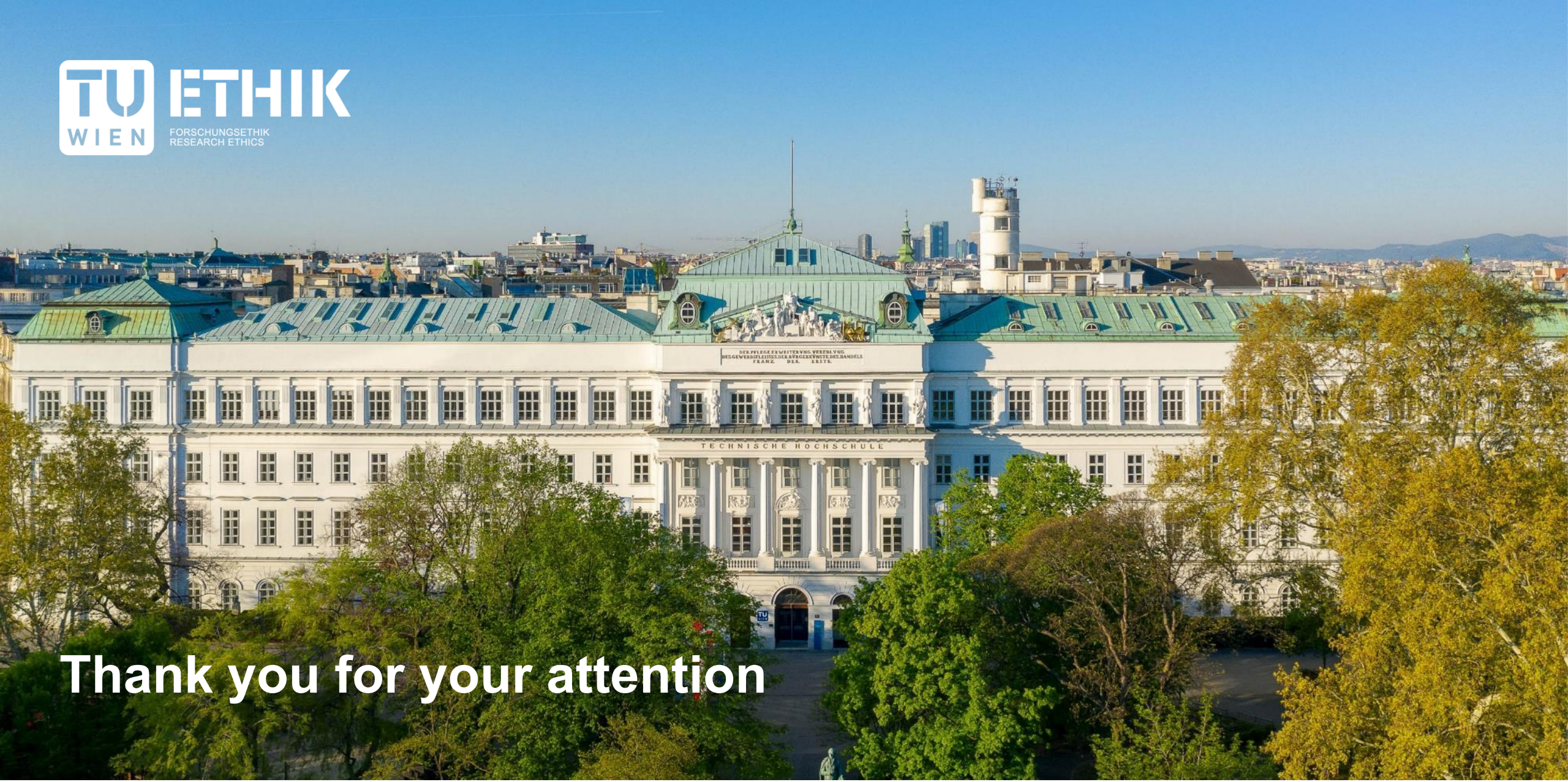

Thank you for your attention

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