Czech-Austrian Winter and Summer School on Energy Systems

Transport policies: National and EU policies

Kateřina Bartáková
Sarah-Lina Welker
Michaela Němcová

Co-operating Universities

Financial support by

Prague and Vienna, 2023

Content

INTRODUCTION 3

TRANSPORT POLICIES IN EU 4

THE CONNECTING EUROPE FACILITY (CEF) 4

RECENT AND CURRENT GEOPOLITICAL SITUATION AND TRANSPORT POLICIES 5

ALTERNATIVE FUELS AND TECHNOLOGIES 5

EUROPEAN TRANSPORT POLICY: MAJOR CHALLENGES 6

SUSTAINABILITY 6

IMPLEMENTATION OF THE EUROPEAN GREEN DEAL 7

MOBILITY4EU: PROJECT IMPLEMENTATION 7

TRANSPORT EMISSIONS: A EUROPEAN STRATEGY 7

SUSTAINABLE TRANSPORT AND MOBILITY 8

TRANSPORT POLICY: REPUBLIC OF AUSTRIA 9

AUSTRIAN TRANSPORT POLICIES 9

AUSTRIAN ROAD SAFETY STRATEGY 10

AUSTRIA'S 2030 MOBILITY MASTER PLAN 10

TRANSPORT POLICY OF CZECH REPUBLIC 11

HISTORICAL DEVELOPMENT AND CURRENT TRENDS IN CZECH REPUBLIC 11

CZECH PRIVATIZATION PROCESS AND TRANSFORMATION RAILWAYS 11

CZ-TRANSPORT: INFRASTRUCTURE DIFFERENCES BETWEEN REGIONS 11

CZECH NATIONAL ACTION PLAN FOR CLEAN MOBILITY 12

CZECH AND AUSTRIAN APPROACH: SIMILARITIES AND DIFFERENCES 12

CONCLUSION 14

REFERENCES 15

Introduction

Transport policies play a key role in shaping sustainable and efficient transport systems, both at national and European Union level. These policies include a wide range of measures aimed at solving different problems, such as reducing emissions, improving air quality, increasing road safety and ensuring reliable and accessible transport networks. While each EU Member State has the autonomy to design and implement its own transport policies, coordinated efforts and cooperation at EU level are also needed to achieve common goals, harmonize standards and promote cross-border connectivity. This requires a comprehensive understanding of the interplay between national and EU transport policies, as well as their impact on mobility, sustainability and socio-economic development across Europe.

On the whole, national transport policies play a crucial role in the energy sector, contributing to sustainable and energy-efficient transportation practices. These policies provide a framework for integrating energy considerations into transport planning and operations, which is vital in addressing the environmental challenges associated with the energy sector. By aligning transport policies with energy objectives, countries can reduce greenhouse gas emissions and enhance energy security by reducing reliance on imported fossil fuels. By prioritizing the development of domestic energy sources, promoting energy diversification, and encouraging the use of locally produced biofuels, countries can strengthen their resilience to energy price fluctuations and geopolitical uncertainties.

Additionally, national transport policies in the energy sector are instrumental in driving sustainable and energy-efficient transportation practices. By integrating energy considerations into transport planning, prioritizing alternative fuels and cleaner technologies, and promoting energy diversification, countries can contribute to reducing emissions, enhancing energy security, and improving overall energy efficiency in global. These policies are crucial in creating a more sustainable and resilient energy future for the transport sector.

Transport policies in EU

The Maastricht Treaty, signed in 1992, is widely recognized as the key agreement that gave birth to the European Union. It introduced the concept of European citizenship and established three pillars within the EU: European Communities, Common Foreign and Security Policy and Justice and Home Affairs. The treaty granted citizens of EU member states additional rights, including freedom of movement within the EU and the right to participate in elections to local councils and the European Parliament. The treaty remains a crucial milestone in the history of European integration and shapes the trajectory of the EU and its member states.

European transport and energy policy is guided by key objectives that include decarbonisation, infrastructure investment and energy security. To achieve decarbonisation, the EU has set ambitious targets to reduce greenhouse gas emissions by at least 55% compared to 1990 levels by 2030. This means promoting the use of low-emission vehicles such as electric cars and increasing the share of renewable energy sources in the energy mix. In parallel, significant investment in transport and energy infrastructure is underway to support these goals, including the development of electric car charging stations, renewable energy generation facilities and energy efficient buildings. In addition, the EU is actively working to strengthen energy security by reducing dependence on fossil fuels and promoting the diversification of energy sources, which includes the use of domestic renewable energy sources such as wind and solar power, while advancing energy storage technologies. Through a comprehensive effort, the European Union is committed to achieving ambitious decarbonisation targets, investing in low-emission vehicles, renewable energy sources and resilient infrastructure to increase energy security and combat climate change.

The Connecting Europe Facility (CEF)

The Connecting Europe Facility (CEF) plays a key role in supporting the integration, sustainability and efficiency of Europe's transport, energy and digital infrastructure. It serves as the EU's main financial instrument and provides support to projects in line with EU policy objectives. The main objective of the CEF is to create a single European transport area by facilitating the adoption of innovative technologies and infrastructure. This includes strengthening interoperability and connectivity across different modes of transport and reducing barriers to cross-border mobility.

Major projects supported by the CEF include rail interoperability, intelligent transport systems and infrastructure for alternative fuels. In addition, the CEF contributes to the development of an integrated and secure European energy market, supports the introduction of renewable energy, energy efficiency and cross-border interconnection. In the digital field, the CEF aims to create a single European digital market by supporting the deployment of high-speed broadband, improving digital services and strengthening cyber security. By promoting connectivity and efficiency in transport, energy and digital infrastructure, the CEF supports sustainable economic growth, job creation and social cohesion within the European Union.

Recent and current geopolitical situation and transport policies

The pandemic of COVID-19 led to a decline in energy demand in 2020 due to restrictions on travel and economic activity. As the world recovers from the pandemic, energy demand has increased rapidly, putting pressure on supply. The pandemic has also disrupted global supply chains, leading to shortages of critical components and materials needed for energy production, such as semiconductors, copper, and lithium. That means decrease of transport of goods.

Political tensions between major energy-producing countries, such as Russia and Ukraine, and between major consumers and producers, such as China and Australia, have led to supply disruptions and price volatility. These circumstances had led to transport restrictions. The energy crisis of 2021-2022 had a significant impact on European transport policy. Soaring energy prices and supply disruptions, particularly for fossil fuels, have forced policy makers to rethink their strategies for a more sustainable and resilient transport sector. The crisis highlighted the vulnerability of traditional energy sources and the need for diversification and investment in alternative fuels and energy-efficient technologies. It has sparked a renewed focus on reducing dependence on fossil fuels, promoting the electrification of transport and exploring renewable energy options. In addition, the crisis underlined the importance of strengthening energy security, improving cross-border energy infrastructure and supporting international cooperation with the aim of mitigating the effects of future energy blackouts on the transport system.

Alternative fuels and technologies

The clean energy transition is a global phenomenon that includes a shift to more sustainable and renewable energy sources. This transition requires significant investment in infrastructure and technology to support the adoption of clean energy solutions. As part of this transition,

there has been a significant decline in investment in traditional fossil fuels due to their adverse environmental impacts and increasing emphasis on reducing greenhouse gas emissions. In the transport sector, this shift towards cleaner energy is evident in the growing popularity and development of hydrogen and electric cars. These vehicles offer alternatives to traditional petrol and diesel cars, reduce dependence on fossil fuels and promote lower emissions. In addition, the transition to clean energy is also extending to the rail transport sector, where efforts are being made to unify train transport systems.

Policies are being implemented to improve interoperability and connectivity between different rail networks and promote a more efficient and sustainable mode of transport. In addition, the transition to cleaner energy sources also includes inland waterways, which are being researched and developed as a greener alternative for transporting goods. By harnessing the potential of inland waterways, countries can reduce their dependence on road transport and achieve environmental benefits through reduced emissions and energy consumption.

European transport policy: Major challenges

Sustainability

Sustainability is a primary consideration in the field of European transport policy, which involves various challenges. The transition to sustainable transport involves the implementation of many new projects and technologies at the same time, which present both opportunities and obstacles. One significant aspect of this transition is the proliferation of electric cars, which requires the development of a robust infrastructure for car charging and the integration of diverse and alternative green energy systems.

However, the successful implementation of these technologies faces obstacles, such as the low efficiency of some green technologies, the maintenance requirements of newly introduced systems, and the overall costs associated with their tuning and maintenance. These factors can compromise sustainability efforts, as the financial burden can outweigh the benefits. Additionally, the introduction of many new features simultaneously raises concerns about potential bugs, downtime, and a reduced end-user experience. Finding the right balance between introducing new technologies and ensuring their efficient operation is a significant challenge in achieving a sustainable and functional European transport system.

Implementation of the European Green Deal

The implementation of the European Green Deal presents several challenges that need to be addressed in order to be successfully implemented. One significant challenge revolves around financing the Green Deal, as it requires significant investment in renewable energy, energy efficiency measures and other green technologies. The costs associated with these investments can be significant and identifying suitable sources of financing becomes essential.

Another challenge is to gain strong political support and coordination at EU and national level. The Green Deal requires the creation of supportive policies and regulations to facilitate the transition to a sustainable economy. Achieving consensus and collaboration among various stakeholders is essential to ensure effective implementation.

One particular issue is reducing dependence on oil. Various solutions can be explored to address this problem, such as developing new liquefied natural gas (LNG) terminals, entering into energy contracts with other countries, expanding oil deposits and promoting renewable energy sources such as pumped storage, wind, solar and hydropower. In addition, advances in battery technology, support for electric cars and encouraging the adoption of alternative modes of transportation that do not rely on gas or oil can help reduce vehicle pollution and transport emissions. The European Green Deal sets a target of achieving 60% reduction in transport emissions compared to 1990 levels by 2050.

Mobility4EU: Project Implementation

The Mobility4EU project faces challenges in the area of financing, private sector cooperation and legal unification. Adequate funding and investment are needed to support the project's objectives, which requires the exploration of various sources of funding and the involvement of stakeholders. Convincing the private sector to actively participate and collaborate is essential, which includes effective communication, incentives and clear benefits. Legal unification across multiple countries and regions is essential for smooth implementation and cross-border cooperation. Projects like the "Mobility4EU" project play a vital role in addressing these challenges and promoting the objectives of the European Green Deal.

Transport Emissions: An European Strategy

Transport in general and especially road transport is the main cause of air pollution in cities. The transport sector has not seen the same gradual decline in emissions as other sectors:

emissions only started to decrease in 2007 and still remain higher than in 1990 as shown in figure 1.

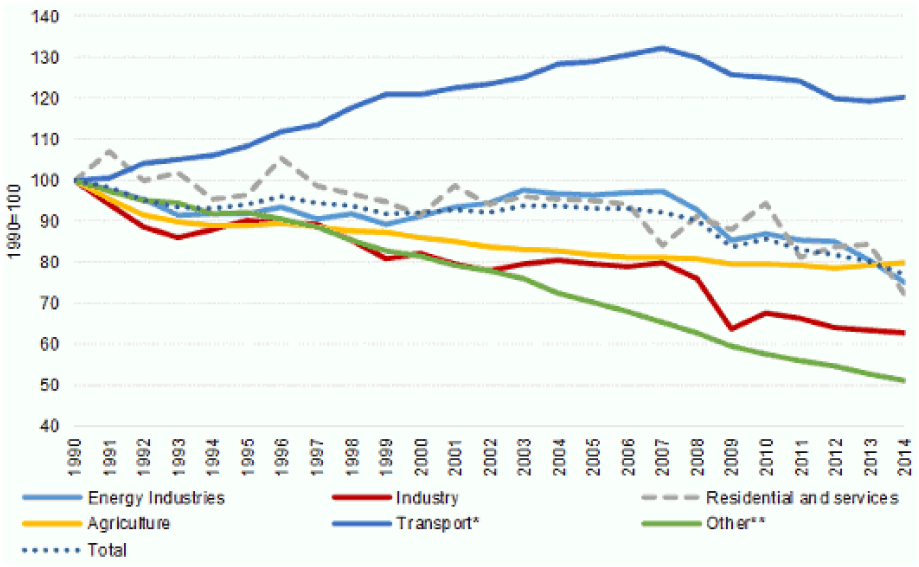

Figure 1, Source: https://climate.ec.europa.eu/eu-action/transport-emissions_en

The Commission's low-emission mobility strategy, adopted in July 2016, aims to ensure Europe stays competitive and able to respond to the increasing mobility needs of people and goods. It may be assumed, that by midcentury, greenhouse gas emissions from transport are going to be at least 60% lower than in 1990 and be firmly on the path towards zero. The strategy draws on existing mechanisms and funds and it will benefit European citizens and consumers by delivering improvements in air quality, reductions in noise levels, lower congestion levels and improved safety. Consumers will benefit from less-energy consuming cars, from better infrastructure for alternative fuels, better links between modes of transport and better safety and fewer delays thanks to the roll-out of digital technologies. Examples for implements of the strategy could be encouraging cycling and walking, car-sharing, the use of advanced biofuels, electricity, hydrogen and renewable synthetic fuels as well as zero-emission vehicles. [12]

Sustainable transport and mobility

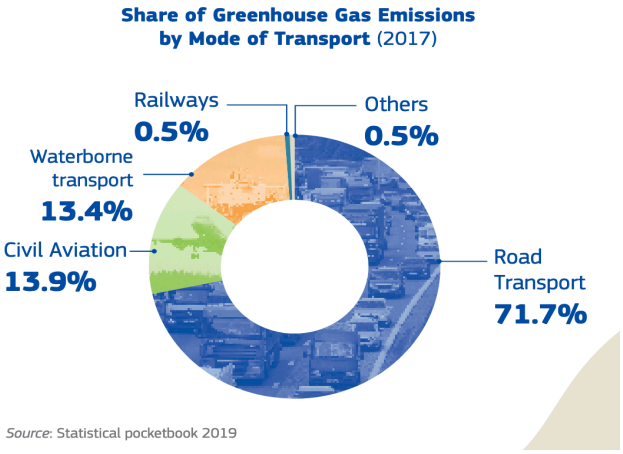

Figure 2,

Source: https://transport.ec.europa.eu/transport-themes/sustainable-transport_en

Europe must reduce emissions from transport further and faster. Transport accounts for a quarter of the Union's greenhouse gas emissions and these continue to grow. The Green Deal seeks 90% reduction in these emissions by 2050. One way is to go digital. That means automated mobility and smarted traffic management systems will Mae transport more efficient and cleaner. Smart applications and ‚mobility as service' solutions will be developed. Another way would be using different modes of transport. E.g., more freight should be transported by rail or water.

Europe's transport system has been a huge success, connecting people across the continent and reducing journey times. As we have all become more mobile, so the carbon footprint of our transport activities has grown. Transport currently accounts for a quarter of the EU's greenhouse gas emissions and this figure continues to rise as demand grows. Improving efficiency across the whole transport system is crucial. Digital technologies enabling automated mobility and smart traffic management systems, for example, will help with efficiency while also making transport cleaner. Smart applications and 'Mobility as a Service' solutions will also play an important role. In aviation, the Single European Sky initiative should significantly reduce aviation emissions at zero cost to consumers and companies by reducing flight times. The negative environmental and health costs of transport – also known as externalities – are not generally reflected in prices. To rectify this, the Commission envisages extending emissions trading to the maritime sector and reducing the EU Emissions Trading System allowances currently allocated to airlines for free. [17]

Transport policy: Republic of Austria

Austrian Transport Policies

Policy instruments are the tools which can be used to overcome problems. There are a number of instruments, which can be categorized by type of intervention: land use measures; infrastructure provision; management of the infrastructure; information provision; attitudinal and behavioral measures or pricing. There is no single solution to national, regional or urban transport problems. Thus, there is need to develop a transport and land use strategy that consists of combination of policy instruments. Such strategy is very likely to be more effective than applying only single instrument. In this way synergy can be achieved. In view of the growing traffic flows in and through Austria, especially by road, Austria has taken early measures to promote environmentally friendly modes of transport such as combined transport. The

development in transport in recent years shows the usefulness of these support measures. [12], [13], [16]

Austrian Road Safety Strategy

The Austrian Road Safety Program 2011–2020, which expired by the end of December 2020, served as a guideline for the strategic road safety work of the federal government for joint action in favor of the safety of all people in road traffic. This program is now followed by the Austrian Road Safety Strategy 2021–2030. It is accompanied by time- and topic-specific action plans that focus on current priority issues for road safety and, due to their nature, allow for the greatest possible flexibility of action. Austria's federal road safety strategy goes in line with the European road safety work and aims to establish and sustainably strengthen a positive road safety culture based on the values of mutual consideration and respectful cooperation between all road users. The focus of the strategy is on: active, safe and climate-friendly mobility; safe rural roads; motorcycle safety; car safety; fit and with full attention on the road; effective raising of awareness, education, training and effective legislation, control activities, administration, and information processes. The goal is: 2030, both the number of fatalities and the number of people seriously injured in road traffic accidents are to be reduced by 50 percent. [14]

Austria's 2030 Mobility Master Plan

The 2030 Mobility Master Plan therefore identifies ways to avoid, shift and improve traffic and transport and significantly increase the share of eco-mobility in total transport – foot and bicycle traffic, public modes of transport, and shared mobility. Mobility satisfies basic human needs and goods transport plays a key role in economic progress. At the same time, tackling the climate crisis in the transport sector is especially challenging. The European Commission’s European Green Deal is an opportunity to make this happen. The EU’s ambitious climate targets for 2030 and beyond will provide massive support for Austria’s mobility transition. Achieving a climate-neutral transport sector by 2040 is the project of the century. The vision for 2040 outlines our ideal future, which serves as the basis for backcasting: planning by starting with our target and working our way back. When we were designing the 2030 Mobility Master Plan, it quickly became clear that we needed a way to connect our vision for 2040 with today’s reality. Extrapolating based on past and current trends alone would not be enough to meet the objective of this project of the century: to become climate-neutral by 2040. [15]

Transport policy of Czech Republic

Historical development and current trends in Czech Republic

After the Velvet Revolution in 1989, Czechoslovakia underwent a significant transformation from a centrally planned economy to a market economy with profound consequences for the transport sector. In 1993, the Czech Republic was established as an independent state, which shaped the direction of transport policy in order to adapt to the developing economic, social and political conditions.

In the early 1990s, the Czech Republic introduced policies aimed at liberalizing the transport sector. It was about the deregulation of transport markets and the privatization of state transport companies. The primary objective was to promote competition, reduce costs and increase overall efficiency. In the late 1990s and early 2000s, the Czech Republic began an extensive program of modernization and expansion of its transport infrastructure.

Czech privatization process and transformation railways

The aim of early 1990s privatization in the Czech Republic was to support economic growth and create a market-oriented economy. Concerns arose over chaotic privatization and concentration of power among the wealthy, leading to limited competition and corruption. The government later pursued strategic privatization to attract foreign investment and improve efficiency. In the railway sector, Czech Railways (ČD) underwent division, sale of minority shares and majority share auction. These processes aimed to increase transparency, responsibility and competition for modernizing the Czech economy and railways. Responding to environmental concerns, the Czech Republic shifted towards sustainable transport, promoting public transport, cycling and walking. Prague exemplifies an extensive and affordable public transport network, serving as a model for efficient urban mobility.

CZ-transport: Infrastructure differences between regions

Differences in infrastructure represent a significant challenge in the Czech Republic, as the current per capita financing system does not take into account the costly maintenance of industrial and infrastructure areas that do not have enough taxpayers. This results in significant differences between economically disadvantaged regions and compact, wealthier regions in terms of infrastructure development. Addressing this issue requires a balanced approach that considers the unique needs of each region, explores alternative funding models and ensures

equitable allocation of resources for critical infrastructure projects. By bridging the infrastructure gap, the Czech Republic can support balanced regional development and improve the connectivity and accessibility of its transport networks.

Czech National Action Plan for Clean Mobility

Part of the National Clean Mobility Action Plan in the Czech Republic is the implementation of comprehensive National Road Traffic Safety Strategy aimed at reducing traffic accidents and increasing road traffic safety. The strategy aims to reduce the number of deaths and serious injuries in traffic accidents by 50% by 2030 through various measures. These measures include improving road infrastructure, more effective enforcement of traffic laws and raising public awareness through campaigns. Road infrastructure improvements include the construction, renovation and addition of safety features such as roundabouts, speed cameras and crosswalks. The strategy also aims to change road user behaviour, particularly by tackling speeding, drink driving (with zero-tolerance alcohol policy) and distracted driving through tougher enforcement and higher fines. Data-driven decision-making is emphasized, using technologies such as artificial intelligence and big data analytics to collect and analyse road safety data for informed interventions. Collaboration between multiple stakeholders, including government, regions, organizations, the private sector and communities, is emphasized for effective planning and implementation.

Czech and Austrian Approach: Similarities and Differences

Both the Czech Republic and Austria recognize the importance of transport policies in shaping sustainable and efficient transport systems. They share a common goal of improving road safety, reducing emissions, and promoting environmentally friendly modes of transportation. However, there are also notable differences in their approaches.

In Austria, policy instruments are used to overcome transport-related challenges. These instruments include land use measures, infrastructure provision, management of infrastructure, information provision, attitudinal and behavioural measures and pricing. The Austrian government emphasizes the importance of a combination of policy instruments to achieve more effective results. There have been implemented measures to promote environmentally friendly modes of transport, such as combined transport, in response to growing traffic flows. Similarly, the Czech Republic underwent significant changes in its transport sector after the Velvet Revolution. The government introduced policies to liberalize the transport market, promote

competition, and increase efficiency. They also focused on modernizing and expanding the transport infrastructure in the late 1990s and early 2000s.

Both countries also prioritize road traffic safety. Austria's road safety strategy aims to establish a positive road safety culture based on mutual consideration and cooperation among road users. The strategy focuses on various aspects, including active, safe and climate-friendly mobility, motorcycle safety, effective awareness raising, education and legislation. The Czech Republic has implemented National Road Traffic Safety Strategy with the goal of reducing deaths and serious injuries in traffic accidents by 50% by 2030. Both strategies include improving road infrastructure, enforcing traffic laws and raising public awareness.

Infrastructure development and regional differences are challenges in Austria and Czech Republic as well. The Czech Republic faces disparities in infrastructure development between economically disadvantaged and wealthier regions. To address this, a balanced approach is needed, considering the unique needs of each region and exploring alternative funding models. Austria's 2030 Mobility Master Plan aims to avoid, shift and improve traffic and significantly increase the share of eco-mobility, including foot and bicycle traffic, public modes of transport, and shared mobility.

Conclusion

The European Green Deal seeks 90% reduction in these emissions by 2050. Moving to more sustainable transport means putting users first and providing them with more affordable, accessible, healthier and cleaner alternatives. A key objective is to boost considerably the uptake of clean vehicles and alternative fuels. By 2025, about 1 million public recharging and refueling stations will be needed for the 13 million zero- and low-emission vehicles expected on European roads. The Commission is supporting and financing the deployment of recharging and refueling points where persistent gaps exist, notably for long-distance travel and less densely populated areas. Achieving the ambitious climate goals also requires a shift to more sustainable transport modes such as rail and inland waterways. For this to happen, the capacity of both modes will need to be both extended and better managed. Multimodal transport – the combining of various transport modes throughout a journey – can also increase the use of sustainable transport modes, but needs a strong boost. The Combined Transport Directive is important here – it is designed to support multimodal freight operations involving rail and waterborne transport, including short-sea shipping.

In conclusion, regarding the national policies of Austria and the Czech Republic, both states share common goals in transport policy, such as promoting sustainable and safe transportation. They both employ policy instruments to tackle transport challenges but differ in their approach of infrastructure development. Collaborative efforts, data-driven decision-making and stakeholder engagement are crucial elements in achieving their respective transport objectives.

References

1. Eisler, Jan. 2008. *Ekonomika dopravních služeb a podnikání v dopravě*. Vyd. 2., nezměn. Praha: Oeconomica.

2. Dinan; Nugent; Paterson. *The European Union in Crisis*. Bloomsbury Publishing, 2017.

3. "Transport: Safe, sustainable and connected transport". European-union.europa.eu. https://european-union.europa.eu/priorities-and-actions/actions-topic/transport_en. (Download 13.5.2023).

4. "Transport infrastructure: EU invests EUR 5.4 billion to support key projects across the continent". Cinea.ec.europa.eu. 29.6.2022. https://cinea.ec.europa.eu/news-events/news/transport-infrastructure-eu-invests-eur-54-billion-support-key-projects-across-continent-2022-06-29_en. (Download 13.5.2023).

5. "Connecting Europe Facility for Transport". Cinea.ec.europa.eu. https://cinea.ec.europa.eu/programmes/connecting-europe-facility/transport-infrastructure_en. (Download 5.4.2023).

6. "Transport: Safe, sustainable and connected transport". European union. https://european-union.europa.eu/priorities-and-actions/actions-topic/transport_en. (downloaded 3.3.2023)

7. "Transport Policy of the Czech Republic: period of 2021 - 2027, with an outlook until 2050". Ministry of Transport of the Czech Republic. https://www.mdcr.cz/getattachment/Dokumenty/Strategie/Dopravni-politika-a-MFDI/Dopravni-politika-CR-pro-obdobi-2014-2020-s-vyhled/Dopravni_Politika_CR_ENG.pdf.aspx. (downloaded 1.3.2023)

8. European Climate, Infrastructure and Environment Executive Agency. "Transport infrastructure: EU invests EUR 5.4 billion to support key projects across the continent". 29 June 2022. https://cinea.ec.europa.eu/news-events/news/transport-infrastructure-eu-invests-eur-54-billion-support-key-projects-across-continent-2022-06-29_en. (downloaded 7.3.2023)

9. "Connecting Europe Facility for Transport". European Comission. https://cinea.ec.europa.eu/programmes/connecting-europe-facility/transport-infrastructure_en. (downloaded 1.3.2023)

10. "Mobility4EU Project". Mobility4eu. https://www.mobility4eu.eu/project/. (downloaded 7.3.2023)

11. "A European Green Deal". : European comission. https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en. (downloaded 7.3.2023)

12. “Transport emissions”. European Comission. https://climate.ec.europa.eu/eu-action/transport-emissions_en. (downloaded 1.3.2023)

13. “Measures for the promotion in Austria”. Federal Ministry Republic of Austria. https://www.bmk.gv.at/en/topics/mobility/transportation/combinedtransport/measures.html. (downloaded 1.3.2023)

14. “Austrian Road Safety Strategy 2021–2030”. Federal Ministry Republic of Austria. https://www.bmk.gv.at/en/topics/transport/roads/safety/vss2030.html. (downloaded 3.3.2023)

15. “Austria's 2030 Mobility Master Plan – Realigning the mobility sector”. Federal Ministry Republic of Austria. https://www.bmk.gv.at/en/topics/mobility/mobilitymasterplan2030.html. (downloaded 3.3.2023)

16. “Austrian Railway Policy”. Federal Ministry Republic of Austria. https://www.bmk.gv.at/en/topics/transport/railways/austria.html. (downloaded 3.3.2023)

17. “Sustainable transport”. Federal Ministry Republic of Austria. https://transport.ec.europa.eu/transport-themes/sustainable-transport_en. (downloaded 1.3.2023)