

# Urban Mobility

Technology Report

Vienna, June 2023

# Dear readers,

When it comes to sustainable innovations, Vienna is enjoying outstanding success. In total, around 9,200 companies in our city are involved with urban and environmental technologies. More than 90,000 people generate sales of around 40 billion euros in this sector annually, which corresponds to 16 per cent of the total sales of Vienna companies.

According to various studies, Vienna also scores particularly high in innovative strength, comprehensive support of start-ups and its strong focus on sustainability. Vienna is also a frontrunner in many "smart city" rankings. The key objective of the Smart City Vienna initiative is to provide optimum quality of life while conserving resources as much as possible. Therefore, in the coalition agreement of January 2021, Vienna's city government agreed to reduce greenhouse gas emissions to net zero by 2040. Vienna is set to become climate-neutral. One of the most important issues is organising mobility in the city. Over 40 per cent of greenhouse gas emissions in Vienna are caused by transport. Numerous experts from business, the scientific research community and the city administration are working on sustainable concepts for sustainable urban mobility.

The Vienna Business Agency acts as a platform for collaboration and information provider for Viennese technology developers. The agency networks companies with business, scientific and city administration development partners, and supports Viennese companies with targeted monetary support and a variety of advisory and support services.

This report shows the innovative solutions on which Viennese pioneers are currently working. Read on for an overview of current developments and find out about outstanding lighthouse projects in Vienna.

The Vienna Business Agency team hopes you enjoy your reading.









0.24	3. Laboratories,
	projects & initiatives
	from Vienna

<sup>p.26</sup> 4. Outlook

5. Services of the Vienna Business Agency

6. Key players in Vienna

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Following the decline in numbers caused by Covid-19, this indicates that the number of regular customers has increased by about 61,000. The total number of passengers has also gone up, with 747 million people travelling a total of 78 million kilometres in Vienna on low-emission public transport in 2022.6 Modal split surveys show that in 2022 most of the trips made by Viennese citizens were environmentally friendly, as they were made on foot (35 per cent) and by public transport (30 per cent), as seen in Figure1. "This puts Vienna below its pre-Covid level (38 per cent travelled by public transport in 2019), but well above comparable cities like Berlin, Munich and Hamburg." The city also has plenty of cycle paths and car-sharing services.

## 1.1 Vienna in facts and figures

Vienna has repeatedly been named the world's most liveable city1 and has successfully positioned itself as a location for business over recent decades.<sup>2</sup> Vienna is located at the heart of Europe and acts as an important hub for trade, logistics and communication. It is a fast-growing city with a constantly increasing population and a high demand for logistics and passenger mobility services. The whole of Austria recorded an increase in population in the previous year, with the highest population growth in Vienna. The city's population grew by 2.6 per cent - an increase of almost 51,000 people. At the beginning of January 2023, Vienna was home to just over 1,980,000 people.<sup>3</sup> In addition, 2021 figures show that around 270,000 people commute from the surrounding areas to Vienna for

However, Vienna's urban population is not merely growing year on year, but also getting older. At present, 19.3 per cent of the Austrian population is under 20 years old, 61.1 per cent aged between 20 and 64, and 19.6 per cent 65 years or older. The figures show that the population share of senior citizens is at an all-time high for the seventh year in a row. This also has implications for the requirements of a transport system and must be taken into account when planning mobility services.5

Vienna offers a well-developed public transport system with underground trains, trams and buses. Wiener Linien, the city's public transport company, claims to transport about 2 million passengers every day. Of these, 1.17 million passengers hold a season ticket, in the form of an annual ticket, educational semester ticket, TOP or youth ticket or a climate ticket).

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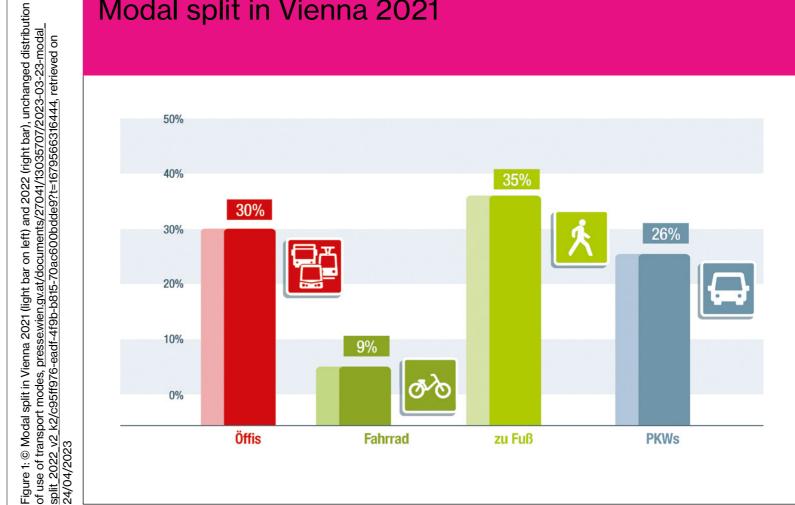
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# Modal split in Vienna 2021



Modal split surveys show the distribution of traffic volume across the different modes of transport. In most cases, a distinction is drawn between public transport (PT), motorised personal transportation (MPT, i.e. cars, motorbikes), and non-motorised modes of transport such as cycling and walking (NMPT, also referred to as active mobility).8

Moreover, Vienna is a major logistics hub in Europe, offering a well-developed transport network of roads, railways, airports and inland ports. Vienna Airport is one of the largest and busiest airports in Western Europe and provides easy connections to international markets. Vienna's location in Europe combined with its proximity to high-quality educational institutions and research make the city a prime location for business. With Freudenau and Albern ports and Lobau oil port, the Port of Vienna is Austria's largest public port on the Danube and is considered the most important goods distribution centre in eastern Austria. A trimodal logistics centre, it connects transport routes by water, rail and road.9

Various initiatives are aimed at consolidating Vienna's status as a business location. Prompting by Austria and Romania led to the establishment and adoption in 2011 of the the EU Strategy for the Danube Region (EUSDR) involving seven other EU member states and five non-member states. This strategy aims to promote regional, social and territorial cohesion between the individual states and regions of the Danube Region through closer cooperation. Its pillars and priority areas include connecting the region by improving mobility and multimodality of inland waterways and rail, road and air links. The Danube Strategy Point (DSP) was established in 2015 to provide strategic support to the key players in the strategy. Since 2018, this has been coordinated by the City of Vienna and the Romanian Ministry of Regional Development and Public Administration. 10 In the coming years, the focus will be on integrating the EUSDR into EU programmes for a smarter, better connected Danube Region with a focus on sustainable (urban) mobility, alternative fuels and energy efficiency.

Regional cooperation and international networking strengthen the Vienna metropolitan area. A unified settlement and local transport policy is one of the core elements of regional cooperation. Vienna's future development as a

Federal Ministry of Climate Action, Environment, Energy, Mobility Innovation and Technology (2016, ed.): Österreich unterwegs 2013/2014. unterwegs 2013/2014".

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Chapter 1. Urban Mobility Chapter 1, Urban Mobility



s in the EU (excluding the UK): Changes in CO2 emissions n CO2 equivalents). European Environment Agency (2022) in the EU: Greenhouse gas emissions breakdown by European Environment Agency (2022)

: © a) Emissions ir or since 1990 (in C port emissions in t mode (2019). <u>Eu</u>

Figure 2: © by sector s b) Transpo transport r

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Figure 3: © Climate rev. long-term average for tl Vienna Climate Guide 2

Vienna has always been a growing city with a strong economy and a well-developed logistics and passenger transport system. Like most large cities, however, it has to contend with myriad challenges, especially in the transport sector.

toll on vulnerable groups in particular. Vienna will be one of the cities most affected by the climate crisis in Europe. <sup>15</sup> Since the 1970s, the average annual temperature in Austria has risen by about 2°C, and in Vienna by as much as 3°C, as seen in Figure 3. <sup>16</sup>

# 1.2 Challenges for urban mobility

Against the backdrop of the climate crisis, Vienna is facing enormous challenges as a fast-growing city. Mobility and transport are especially important in achieving the ambitious goals the city has set itself (climate neutrality by 2040), as approximately 43 per cent of Vienna's emissions are caused by private motorised transport. The increasing demand for mobility and the growing volume of goods traffic must be managed without exacerbating existing conflicts of use between different road users such as pedestrians, cyclists, public transport and cars, or by adversely affecting vulnerable groups. 13

The city must be kept a safe and healthy, affordable living space with a high quality of life for all, while minimising the negative effects of the climate crisis (rising temperatures, etc.) on the urban population. The central challenge in all of this is to transform Vienna into a climate-neutral, climate-resilient city, in a relatively short time. This will require enormous effort and cooperation between a multitude of players. In the future, street space will need to be reallocated and redesigned to make it greener, shadier and cooler, gender-sensitive, safe, suitable for everyday use and with more space for active mobility options like cycling and walking, along with efficient public transport and sharing services.

As social acceptance of changes in the mobility and the active participation and inclusion of the local people are crucial, it is essential to involve them in planning and decision-making processes that affect their neighbourhoods through new, appropriate participation procedures for stakeholders. The challenge is to reach a broad consensus and design an inclusive mobility policy that takes the needs of all population groups into account. This is an extremely complex task, but one that must be addressed in order to properly address the many demands on increasingly scarce public spaces.

Furthermore, traffic is one of the main sources of air pollution in Vienna, and traffic-related noise pollution can also be detrimental to residents' quality of life. The lower-income population suffers disproportionately from the negative aspects of traffic (e.g. due to living near busy roads), despite not being the main cause of such problems. Traffic is one of the biggest emitters of greenhouse gases that contribute to climate change and takes up a significant amount of urban space, reducing the space available for purposes such as leisure activities, green spaces and housing.<sup>14</sup>

Overheating due to densification of buildings, roads and other sealed surfaces in the city leads to a heat island effect. This can lead to temperatures in the city being several degrees higher than in the surrounding rural areas, which takes a heavy

#### 12

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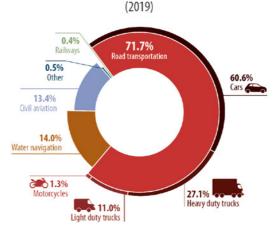
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#### Chapter 1, Urban Mobility

## Emissions in the EU/ Transport emissions in the EU

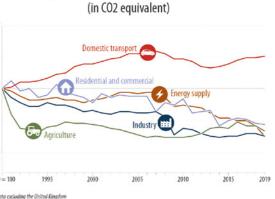
### TRANSPORT EMISSIONS IN THE EU

Greenhouse gas emissions breakdown by transport mode



#### EMISSIONS IN THE EU\*

Change in emission levels by sector since 1990



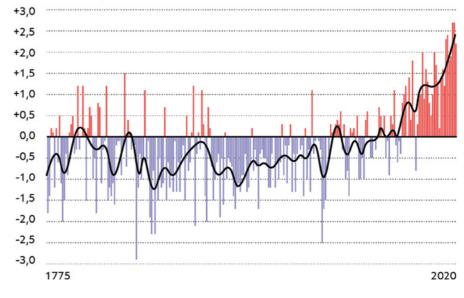
9,7 Grad Celsius

langjährige Durchschnitts-

temperatur der Jahre

# Temperature trends in Vienna

#### Abweichung der Lufttemperatur im Jahresmittel von der langjährigen Durchschnittstemperatur der Jahre 1961 bis 1990 in Grad Celsius



# Seeing the bigger picture: the international context & the Viennese way

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Building on all these trends, the understanding of the role of many players within the transport sector is changing. The production and import of vehicles by original equipment manufacturers (OEMs) is waning in importance and mobility service providers and platform providers are becoming increasingly significant. Energy suppliers are becoming charging infrastructure operators and thus opening up new commercial opportunities as mobility service providers.

Vienna Business Agency's "Sustainable Urban Logistics in Vienna" technology report in 2021 named five trends that will determine the future of urban logistics in Austria. The general trends shown in Figure 4 are also apparent in passenger and freight mobility. Automated or autonomous driving, the use of vehicles with alternative drives, the shift of local supply to times and routes outside or away from peak traffic times or the bundling of deliveries, decentralisation of warehouses and freely accessible parcel storage spaces, shared services, digitalisation, intermodality, smart and integrated mobility solutions, private micromobility and operational mobility management are all essential to the development of urban mobility.

Cities like Vienna have various strategies for achieving their climate goals and for going along with these trends or counteracting the ones that have damaging effects on the climate. For instance, Vienna is increasingly promoting the use of environmentally friendly means of transport and active mobility, developing traffic calming and prevention measures, and updating existing laws and regulations in the light of the rapid developments.

To meet the challenges of increased transport volumes in future, the mobility demand must be reduced through a combination of different measures (some of which also go beyond the transport sector). At the same time, necessary journeys must be shifted to environmentally friendly means of transport. Public transport will form the backbone of mobility to an even greater extent than in the past. Combined with active mobility and sharing options, this will result in the emergence of a fully-fledged mobility system.

# 2.1 International trends and a changing landscape of players

Passenger and freight mobility are closely connected with the IT services, energy, housing and work sectors. The many developments and trends in these areas already show that radical change is underway in (urban) mobility, while also pointing to other essential levers for new, integrated and environmentally friendly mobility solutions of the future. Instead of referring to the transport sector – a term that focuses on vehicles – we now speak of "passenger and freight mobility", which makes the shift in focus clear.

People tend to make personal mobility decisions in terms of costs and time, or base them on personal habits, the perception of safety and comfort or trends in society as a whole. New approaches and the dissolution of previous thought structures can lead people to rethink their assumptions and habits, and thus open up new options in the mobility sector. <sup>17</sup>

#### 17

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# Overall societal trends and new mindsets



# 2.2 International examples on the way to sustainable mobility

The last few years have seen a worldwide trend towards car-free cities. More and more cities are recognising the negative impacts of car traffic on the environment and the health and quality of life of their inhabitants. So they are endeavouring to reduce or even completely ban car traffic in their city centres.

The following cities offer a selection of examples of good practice:

Ljubljana, the capital of Slovenia, has been steadily removing vehicles from its city centre for a while. Back in 2007, the city introduced a systematic plan to gradually implement a car-free city centre while expanding public transport and cycle routes. Some areas were declared car-free zones, where only delivery services are allowed to enter at selected times. The network of cycle paths was also expanded.<sup>20</sup>

Other European cities with a particular focus on car-free neighbourhoods include the French capital Paris, the Spanish cities of Barcelona and Madrid, Oslo, Norway and Cologne, Germany. Paris already has car-free zones along the Seine; major plans for a car-free city centre have been postponed for two years. By 2024, there should be a traffic-calmed zone with restricted motorised personal transport (MPT), combined with a general speed reduction and a ban on through traffic in the city centre. Particularly car-free since 2017 by means

of diversions, one-way streets and traffic calming with speed limits. In Madrid, the urban area will gradually be designated an environmental zone by 2025.<sup>23</sup> The public space will thus again be made available for different uses.

#### 20

DerStandard (2021): Welche Städte bald Autos verbannen wollen, www.derstandard at/story/2000131186938/welche-staedte-bald-autos-verbannen-wollen, retrieved on 22/06/2023

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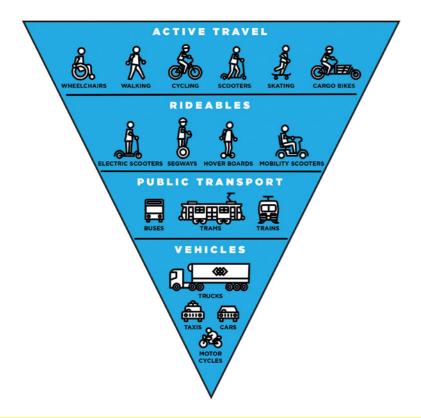
Energieleben platform – Wien Energie (ed., 2020): Topliste: Diese 9 Städte sind autofrei, <a href="www.energieleben.at/topliste-diese-9-staedte-sind-autofrei">www.energieleben.at/topliste-diese-9-staedte-sind-autofrei</a> and Stern Magazin (ed., 2019): Wie wäre eine Stadt ohne Autos? In Oslo kennt man schon die Antwort, <a href="www.stern.de/auto/service/oslo-zeigt--wie-liebenswert-die-stadt-ohne-autos-sein-koennte-9011114.html">www.stern.de/auto/service/oslo-zeigt--wie-liebenswert-die-stadt-ohne-autos-sein-koennte-9011114.html</a>, retrieved on 22/06/2023

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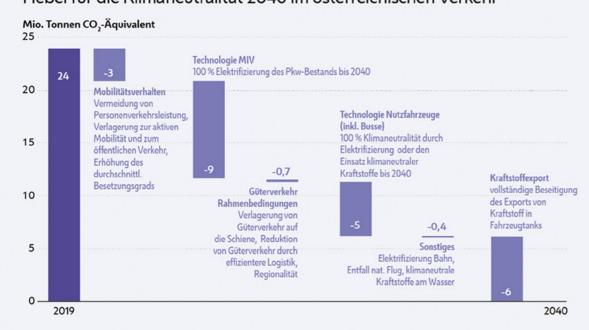
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# Levers for reducing greenhouse gas emissions from mobility in Austria

#### Hebel für die Klimaneutralität 2040 im österreichischen Verkehr



: © Levers for reducing greenhouse gas emissions from mobility in represented according to the BMK (2021) – 2030 Mobility Masterplan, Vienna Climate Guide 2022 ö

Copenhagen

Bicycle Innovation Lab,

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Reverse traffic

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In Asia, the city-state of Singapore is pursuing a similar strategy for newly developed districts like Tengah, which is to be made completely car-free. This area, which will be ready for residents to move in from 2024, is expected to be connected to the Mass Rapid Transport Line (MRT) in 2027, will serve the district with four stations.<sup>24</sup> The very high cost of registering personal cars is also intended to discourage the majority of the population from owning a car. The revenue generated from this is used to expand public transport.<sup>25</sup>

According to the Bicycle Cities Index, the most bicycle-friendly city in the world in 2022 was Utrecht, ahead of Münster, Antwerp, Copenhagen and Amsterdam.<sup>26</sup>

The Danish capital Copenhagen has adopted the goal of becoming a completely climate-neutral city by 2025 and has been working towards achieving this for many years. The restructuring of inner-city transport (investing in and installing bicycle infrastructure in specific locations) and working towards a number of policy goals, such as becoming the world's best cycling city in 1993, have been essential to these efforts.<sup>27</sup> Back in 2011, the independent Bicycle Innovation Lab, based in Copenhagen, developed an inverted traffic pyramid. In urban and transport planning, this serves as a method for focusing on active mobility in cities in order to reduce traffic congestion and the environmental impacts of the sector. Since then, the mobility landscape has become more diverse, while the message remains almost unchanged: active mobility should be given the highest priority.<sup>28</sup>

# 2.3 Vienna strategies

#### City of Vienna mobility strategies

Innovative and successful strategies for sustainable mobility are being developed in many cities around the world. The City of Vienna has also adopted the goal of becoming climate-neutral by 2040.<sup>29</sup> The way to future mobility was set out in detailed, specialised concepts for the 2025 Urban Development Plan:

- Specialised concept for mobility in the Urban Development Plan (STEP) 2025:30 Vision of urban mobility. Mobility options in Vienna must be fair, healthy, compact, ecologically sound, resilient and efficient. The population should move towards a mobility approach that takes everyone's need into account. In 2021, work began on the new STEP 2035, which is expected to be completed in summer 2024.
- Electric Mobility Strategy detailed concept for STEP 2025:31 This sets out the general objectives for electromobility, which has a longstanding tradition in Vienna's public transport system (suburban railway, underground, tram and city bus). However, there should also be an increased share of electric vehicles among personal transport in the city (e.g. electric cars, mopeds and bicycles).
- Logistics 2030+ Action Plan: 32 The Logistics 2030+ Action Plan was developed during 2017-2019. In collaboration with the province of Lower Austria, the Lower Austrian Chamber of Commerce and the Vienna Chamber of Commerce, the City of Vienna is

implementing the Sustainable Logistics 2030+ Lower Austria-Vienna project with support from denkstatt and ECONSULT. This involves 35 interlinked measures comprising 133 actions in eight topic clusters, all aimed at shaping logistics in Lower Austria and Vienna sustainably, even with growing traffic and new technologies.

The Straits Times, 2023: More than 18,000 BTO flats launched in Tengah. over half of planned public housing supply, www.straitstimes.com/singapore/ housing/more-than-18000-bto-flats-launched-in-tengah-makes-up-overhalf-of-planned-public-housing-supply, retrieved on 17/07/2023

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ARGE L2030 (2019): Sustainable Logistics 2030+ Lower Austria-Vienna. Action Plan www.logistik2030.at/?page\_id=276, retrieved on 22/06/2023

- The Smart City Vienna Framework Strategy 2019– 2050:<sup>33</sup> entails a long-term vision for the future. The second of its 12 target areas, Mobility & Transport, comprises measures for a mobility transition.
- Vienna Climate Guide, City of Vienna, March 2022:<sup>34</sup>
  The Vienna Climate Guide sets out key strategies, levers and measures to achieve sustainable mobility:
  (1) avoiding motorised personal transport, consolidating ecomobility and (2) phasing out of fossil fuels with specific planned measures. Vienna is also one of six "pioneer metropolises" named as part of the Climate-Neutral City mission of the Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK).
- Vienna Business Districts:<sup>35</sup> In the Vienna Business Districts project, the City of Vienna is working with the Vienna Business Agency and the Vienna Chamber of Commerce to assist companies in three of the city's business districts in their efforts to achieve sustainable operations. Corporate mobility management also plays an important role.

The European ELTIS initiative promotes the exchange of knowledge covering all aspects of mobility emerging from sustainable urban mobility plans (SUMPs) and sustainable urban logistics plans (SULPs). SUMPs and SULPs are integrated strategies that address the complexity of urban transport. 36

The SULP for Vienna (Logistics 2030+ Action Plan, see above) sets out a series of measures to increase sustainable logistics solutions and services in the city. Elements include:

- introducing environmentally friendly vehicles
- using intelligent logistics systems
- promoting overnight deliveries
- improving infrastructure

The SUMP for Vienna (STEP 2025, specialised concept for mobility, see above) contains a variety of measures to make passenger mobility in Vienna more sustainable. These include:

- expanding public transport: for example, the U5 underground line is to be completed by 2026 and the U2 underground line by 2028.
- promoting bicycle traffic and pedestrians
- reducing individual transport
- improving the transport infrastructure

# 2.4 Developments and strategy implementation in Vienna

Many of the international examples described in Chapter 2.2 are also being executed in Vienna as measures based on the strategies and concepts mentioned in Chapter 2.3, either across the board or in part.

Vienna has several car-free areas that are closed to car traffic and cannot be used as parking areas: the historic city centre, for example, is largely car-free. Cars are only allowed to drive here in exceptional cases and with a permit. There are plans to expand the traffic calming of the city centre. In the future, driving into the city centre without restrictions will be almost entirely limited to residents; non-residents will have to find a parking garage as quickly as possible. The Mariahilfer Strasse is one of Vienna's main shopping streets and has been largely car-free since 2013. Since 2022, there has been a noticeable reduction in traffic in Vienna, especially of commuter cars, due to the sweeping expansion of the "Parkpickerl" permit zone. Parking management will be extended over the coming years, with revenues remaining earmarked for ecomobility.

#### 33

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Municipal Department 18 – Urban Development and Planning (2022): Traffic calming in Vienna's 1st district, Inner City, www.wien.gv.at/verkehr-stadtentwicklung/verkehrsberuhigung-innere-stadt.html, retrieved on 22/06/2023

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City of Vienna: Parking fees in Vienna, <u>www.wien.gv.at/verkehr/parken/kurzpark-</u>zonen/gebuehren, retrieved on 22/06/2023

Vienna is implementing and promoting the concept of the "15-minute city", which calls for short distances between home and services and encourages the promotion of mixed uses and nearby gathering places and attractions. Unlike in the outlying districts and the city border, residents in the densely built-up central neighbourhoods can meet their daily needs within a few minutes' walk: the city comprises many 15-minute neighbourhoods. For new, large-scale urban developments like Seestadt Aspern or the Sonnwendviertel, planners have ensured excellent accessibility to everyday necessities on foot within the neighbourhood from the very outset. 39

Reducing freight transport within the city requires intelligently designed goods distribution through freight distribution centres and cross-docking centres near the city, plus a good network of midi-hubs in the city itself. Alternative drives should increasingly be used for the last mile. The overarching aim is to decouple economic growth and the development of freight transport.  $^{\underline{40}}$ 

As a bicycle-friendly city, Vienna is seeking to continue improving services for cyclists. The Vienna Climate Guide envisions a push to create a comfortable, safe and seamless cycling network. The strategic cycle path expansion programme provides that the cycling infrastructure will be expanded by 2025, long-distance cycle routes will be extended by 2030, gaps in the existing network will be closed and general quality improved. There are also plans to significantly increase the number of secure bicycle parking spaces in public areas and make it easier to transport bicycles on public transport.

In Vienna, private sharing and mobility services (e.g. bicycles, car sharing and scooters) are seen as a supplement to ecomobility (public transport, active mobility) and are supported and operated by the City of Vienna and Wiener Linien. When combined with bike sharing, rental cars, taxis and (e-) scooters, car sharing or car pooling offers another piece in the puzzle when it comes to individual combined mobility without the use of private cars. Car sharing reduces parking pressure and car traffic at once. 42 Wiener Linien operates the WienMobil Auto service, comprising about 100 electrically powered vehicles throughout the city, 20 of which are electric vans. Like the car-sharing services run by ÖBB Rail & Drive (mixed fleet), MO.Point (all-electric), sharetoo – e-car sharing by Porsche Bank (all-electric) and Caruso Carsharing (e-car and e-bike sharing fleet in the Triiiple Tower, and one e-car in the Bruno-Marek-Allee residential complex), WienMobil Auto is station-based - linked to a fixed location for rental and return. There are now "free-floating" services run by ELOOP (purely electric) and SHARE NOW (mainly combustion engine). These can be rented and parked again in a designated public space within the built-up area of Vienna. Privately owned cars can be shared and rented via the Getaround platform.

Through WienMobil Rad, Wiener Linien offers more than 3,000 rental bikes from 30 cents per 30 minutes. As a way of promoting environmentally friendly, multimodal transport, annual pass holders\* receive a 50 per cent discount. The new system is operated by nextbike, an Austrian company owned by TIER Mobility. In addition to setting up the stations, it now also handles the provision and operation of the bikes, including servicing, maintenance and distribution. 43

Carrier bikes can be rented free of charge from Grätzlrad Wien, coordinated by the Vienna Mobility Agency. $^{44}$ 

The ÖAMTC rents out moped-style electric scooters within in a specific business area of Vienna via the Easy Way app. 45 The stricter regulations on parking in public spaces established in May 2023 also had an impact on e-scooter sharing services. Four operators – Lime, Voi, Bird and Link – have been granted a concession and in the future will have to impose restrictions on fleet size and other aspects. Users can select and activate the e-scooters via an app, but in future they will only be able to be parked at selected locations. The City of Vienna is adopting measures to ensure that the providers of such services

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Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology (ed., 2022): Entkopplung von Wirtschaftswachstum und Güterverkehrsentwicklung in Österreich bis 2040, www.bmk.gv.at/themen.mobilitaet/transport/gueterverkehr/masterplan.html, retrieved on 22/06/2023

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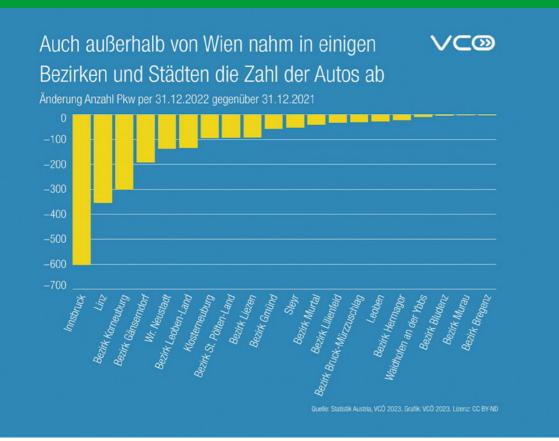
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Vienna Mobility Agency: Grätzlrad Wien, www.graetzlrad.wien, retrieved on 22/06/2023

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ÖAMTC: eScooter Sharing Wien: Elektroroller mieten mit ÖAMTC easy way, www.oeamtc.at/thema/motorrad-moped/escooter-sharing-wienelektroroller-mieten-mit-oeamtc-easy-way-30962967, retrieved on 22/06/2023

# Decrease in level of motorised traffic in 2022 compared to 2021



meet the disparate needs of different areas of the city. Although rental e-scooters, like rental bicycles, make a good addition to urban transport, they are often an obstacle for pedestrians and visually impaired people in the city.  $\frac{46}{}$ 

According to information published by VCÖ in May 2023, the number of passenger cars per 1,000 inhabitants decreased in 17 of Vienna's 23 municipal districts and in 17 districts and statutory cities in Austria during the 2021–2022 period. 47 The fact that the number of registered cars in Vienna has not grown in line with the number of inhabitants is due to the increased costs of purchasing and running private cars and the growing array of mobility options within the city. Measures to steer the mobility behaviour of the approximately 270,000 commuters are also having an effect. An extensive short-stay parking zone has been in effect throughout Vienna since 1 March 2022. Parking is subject to a charge in every district of Vienna.48 Figure 7 suggests that such active parking management has changed the mobility behaviour of commuters from Vienna's surrounding areas, such as Korneuburg, Gänserndorf, Wiener Neustadt and Klosterneuburg.

Numerous research and innovation measures are currently underway in Vienna to address how future passenger and freight transport can function in cities in the future, ensuring eco-friendly mobility and a good-quality urban living space for all

1. <u>Alternative drive technologies</u> are essential in reducing air and noise emissions in heavily polluted urban areas like Vienna. The electrification of vehicles is a major trend that has only intensified in recent years, with ever more cars, motorbikes and bicycles now electrically powered. Public transport vehicles like buses and trams are also increasingly powered

by electricity, thanks to the purchase of electric buses and the installation of the necessary operating infrastructure. Wiener Linien has announced that it will operate 60 electric buses from 2023, set up a centre of excellence for electric buses in Siebenhirten and operate a hydrogen test bus and filling station in Leopoldau. Trams and underground trains account for the largest share of the volume of public transport thanks to their capacity. In the future, Vienna's taxis will also be 100 per cent electric and form part of the ecomobility landscape.

Regulatory requirements are currently being drafted. At the same time, the City of Vienna, the Vienna Chamber of Commerce, Wien Energie and private companies are already focusing on converting Vienna's taxi fleet to electrically powered vehicles. Special financial incentives from the federal government and the City of Vienna in the form of an electric taxi subsidy aim to make it easier for companies to start making the switch. If the eTaxi Austria project supported by the Climate and Energy Fund proves successful on pilot runs in Vienna and Graz, then conductive, automatic charging of vehicles via a floor plate at taxi stands will become standard in Vienna. The innovative Matrix Charging® system developed in Austria by Easelink is an important element of the system for autonomous driving in future and is likely to be of interest to other cities.

2. According to the Gartner 2020 connected vehicles and smart mobility hype  $\operatorname{cycle},^{50}$  <u>automated and autonomous driving</u> will not reach market maturity until after 2030. At present, the potential of this technology lies primarily in goods and warehouse logistics and in public rail transport. It will become available in 2026, upon completion of the fully automated underground line  $5.\frac{51}{}$ 

Figure 7: © Decrease in level of motorised traffic in 2022 compared to 2021. Korneuburg, Wiener Neustadt and Klosterneuburg are among the top 7 districts/towns from which commuters travel to Vienna. Source: VCÖ, data: Statistik Austria, 2023

The development of self-driving vehicles is continuing apace and could revolutionise the way we move around the city in the future. However, the integration of autonomous vehicles into public transport does throw up a number of technological challenges.

The City of Vienna has developed basic positions on the need for regulation in road transport, which will have to be taken into account as technological development progresses. These relate to urban space and efficiency, safety, infrastructures and traffic control, and are also anchored in STEP 2025. 52

3. <u>Sharing concepts</u> are already used for a variety of means of transport. Everyone is talking about car sharing, bike sharing, e-scooters, mobility points and hubs. These should all reduce the need for private cars and offer a flexible alternative for getting around the city.

Wiener Linien is an active player in the city through its WienMobil stations. It aims to link these closely with the public transport services that are already well developed and widely used in Vienna. This trend is apparent in many European cities as more and more players enter the market offering flexible solutions (stations, means of transport, etc.) to city administrations. 53

4. Smart mobility and integrated mobility interact closely with sharing services. Digitalisation and networking are exerting an ever-greater influence in urban planning. Smart traffic management systems and intelligent traffic guidance systems can help to optimise and improve traffic in the city.

Wiener Linien's WienMobil app and the Austrian Federal Railways' wegfinder app currently cover a wide range of mobility services.

RocknRolla's ZeroFlex project, financed by the Climate and Energy Fund, is working with an Austrian consortium to develop a modular, highly flexible, energy-autonomous and cost-effective mobility station as part of an overall system.

5. Environmentally friendly means of transport and active mobility (walking, cycling, etc.) are at the core of a sustainable city of the future. Bicycles and ecomobility are increasingly popular and environmentally friendly modes of transport in the city. Various initiatives are underway to improve the infrastructure for cyclists and pedestrians and make transport safer and more efficient for everyone. Thinking of mobility as something highly interconnected with other sectors of urban planning and the economy (e.g. in the form of operational mobility management, evidence-based recommendations for action, a diverse spectrum of players) is a relatively recent development.

In the Trans|former flagship project, 20 organisations are working with the cities of Vienna (Municipal Department A18), Graz, Salzburg and St. Pölten to define learning processes for other cities on redesigning public space to create attractive, environmentally friendly mobility. It focuses on the processes along the way – identifying, redesigning and using public spaces to create future cities that are adapted to the climate (i.e. "climate-fit").

Tools like the ACTIV8 data model for active mobility in Austria have been developed over the years and now serve as a basis for mobility-related decision-making by municipalities and provinces.<sup>54</sup> Vienna also uses ACTIV8 in the LiDo – Left Bank of the Danube project. In a participatory process to promote and improve walking in Floridsdorf and Donaustadt, the existing strengths and weaknesses in the district are determined in a structured way using GIS analysis and evaluating urban performance indicators in cooperation with or on behalf of the Vienna Mobility Agency. Evidence-based recommendations for action are increasingly in demand. Private Mikromobilität mit E-Scootern, E-Bikes, Tretrollern und ähnlichem gewinnt zunehmend an Bedeutung und bietet in Zusammenhang mit aktiver und umweltfreundlicher Mobilität eine schnelle und flexible Möglichkeit, sich in der Stadt fortzubewegen.

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City of Vienna: Kick and electric scooters, <a href="www.wien.gv.at/english/transportation-urbanplanning/scooter.html">www.wien.gv.at/english/transportation-urbanplanning/scooter.html</a> and DiePresse (ed., 2023): Künftig Nummerntafeln für E-Scooter, <a href="www.diepresse.com/13432774/kuenftig-nummerntafeln-fuer-e-scooter.etrieved">www.diepresse.com/13432774/kuenftig-nummerntafeln-fuer-e-scooter.etrieved</a> on 22/06/2023

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City of Vienna: Mit der U5 vom Karlsplatz bis Hernals, www.wien.gv.at/stadtentwicklung/projekte/verkehrsplanung/u-bahn/u2u5/linie-u5.html retrieved on 22/06/2023

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City of Vienna: Grundpositionen zum automatisierten Fahren, www.wien.gv.at/stadtentwicklung/strategien/autonomes-fahren.html#raum, retrieved on 22/06/2023

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Wiener Linien: WienMobil Stationen, www.wienerlinien.at/wienmobil/stationen, retrieved on 22/06/2023

#### 54

www.active-mobility.at

- 6. <u>Private micromobility</u> with e-scooters, e-bikes, pedal scooters and similar is becoming increasingly prevalent. Combined with active, environmentally friendly mobility, it offers a fast and flexible way to get around the city.
- 7. Traffic calming and avoidance are key objectives for future climate-fit cities, in addition to all the technological innovations, and are increasingly being incorporated into urban planning strategies. There is a growing focus on accomplishing these objectives and taking the appropriate measures, especially in heavily used inner cities or demarcated areas (blocks, Grätzl, Kiez, etc.).

The Supergrätzl concept was applied for the first time in Favoriten and tested in a pilot project from July 2021 to October 2022. The area covers 9.5 hectares between Neilreichgasse, Gudrunstrasse, Leebgasse and Quellenstrasse, and offers the ideal conditions for a trial, as the area is densely populated and heavily affected by heat.  $\frac{55}{2}$ 

Along with the Trans|former project (Supergrätzl pilot projects, Vienna), the Meidling district – Vienna's 12th district – is also focusing on the transformation of public space in the Meidlinger L project. A key gap in the network of cycle paths will be closed by transforming Argentinierstrasse into a bicycle street. It will become part of the future Radhighway Süd, a 9km-long cycle route leading from the city centre to the province of Lower Austria. The completion of the newly traffic-calmed and greened Argentinierstrasse is scheduled for the end of 2024. 56

8. <u>Corporate mobility management</u> can make a noticeable contribution towards modal shift, traffic avoidance and traffic calming. The locations that companies choose also have a significant impact. Companies should implement measures for corporate mobility management based on legal requirements (e.g. the EU Taxonomy Regulation), with the help of financial incentives (e.g. job ticket or job bike subsidies).

The klima:aktiv advisory programme by the BMK offers all companies in Austria free support in implementing company mobility solutions, company mobility management and identifying sustainable mobility strategies.<sup>57</sup>

Various funding projects, like SEAMLESS, active2work, GISMO and ActNow, have focused on developing solutions for innovative corporate mobility management, taking account of all influencing factors (company interests, place of residence, place of work, personal environment, health, etc.).

9. Adapting existing legal provisions to rapid technological and organisational developments represents a comprehensive yet sustainable process for the urban mobility of the future. Existing regulations (e.g. parking space obligations) or the content of the road traffic regulations (StVO) are being updated and adapted to new objectives (e.g. promoting cycling, fewer private cars in the city). The provincial operating regulations for taxis regulate the taxi industry in Vienna and offer potential for shaping urban mobility in future. Some initial steps have been taken in the areas of digitalisation, IT and legal requirements. The widespread provision of climate-related guidelines and regulations for road traffic supports forward-looking urban planning. Publicly issuing

mobility-related data makes it possible to develop an evidence base for such actions. Innovative mobility contracts enable cities to integrate mobility measures into housing development.

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Vienna Urban Planning: Supergrätzl Favoriten, <u>www.wien.gv.at/stadtplanung/supergraetzl-favoriten</u>, retrieved on 22/06/2023

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Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology: klimaaktiv – Mobilitätsmanagement für Betriebe und Bauträger, www.klimaaktiv.at/mobilitaet/mobilitaetsmanagem/betriebe.html, retrieved on 22/06/2023

#### Looking to the future

Urban cable cars are no longer a novelty: Barcelona has had them since 1931, Cologne since 1951 and Porto since 2011. A feasibility study is currently examining the potential for a city cable car service in Vienna. This would connect Hütteldorf railway station with Ottakring station in just 17 minutes, covering a distance of 4.6 km, and would provide better public access to the west of Vienna, supplementing the current public transport services.

Test environments are set up at Airlabs, an innovation laboratory for unmanned aerial systems, with Viennese company Frequentis in a leading role. 58 Unmanned aerial technologies, the use of drones, robo-taxis and so on all form part of a plethora of projects, studies and visions of the future. They may come to be used in passenger mobility in Vienna over the coming years or decades. The technologies for logistics, especially for warehouses, are now ready for the market. For more trends in logistics, please see the technology report "Nachhaltige Urbane Logistik in Wien". 59

General trends have an equal impact here and in passenger mobility, while the focus on goods also has a bearing on specific future developments.

- Automated and autonomous driving have proved their worth in logistics. Unlike passenger mobility, goods-related processes have seen a steady rise in automation, related to the emergence of innovative vehicles and the elimination of ethical safety concerns.
- 2. Alternative drive technologies represent a significant future trend that relates to automated driving. Other factors include the use of innovative vehicles and developments such as innovative charging infrastructure, or the installation of infrastructure at specific locations.

In the RemiHub project, Wiener Linien worked with Viennese companies to test the use of electric cargo bikes for last-mile deliveries in urban areas. This is closely related to Trend 3.

Recently, WK Wien and Wien Energie have been testing a new charging point concept for businesses without their own car park to facilitate the switch to e-mobility.<sup>60</sup>

The eTaxi Austria project is testing Matrix Charging® charging pads and connectors from Easelink. These could prove useful for delivery services if successfully piloted with the Viennese taxi fleet. Fast charging stations and parks with up to 150kW power per charging point are also being set up in Vienna.

3. <u>Decentralised warehouses</u> (microcentres, logistics zones, microtranshipment systems) are becoming more prevalent and can greatly add to goods-related motor traffic. Transhipment from large trucks can take place outside an urban centre and innovative small vehicles can be used for further distribution.

Many years ago, the concept of sustainable inner-city delivery logistics based on city-centre distribution hubs and alternatively powered vehicles was developed in Green City Hubs. It took into account technology, urban planning concerns

and transport-related factors. Evaluation was based on delivery service, economic efficiency and energy consumption, and environmental emissions.

The "Remise meets the freight logistics hub" field test was carried out as part of RemiHub.  $^{\underline{61}}$ 

4. Freely accessible parcel storage spaces (as part of consignment transfer systems) are already widely used and familiar in Vienna. As delivery volumes increase, they can help reduce or avoid the need for additional journeys.

Self-service centres at post offices, post boxes in private residential buildings/areas, Storebox by a Viennese start-up company and the WienBox<sup>62</sup> by Wiener Stadtwerke all offer a flexible option for storing, sending, returning and receiving deliveries regardless of opening hours, and thus avoiding peak traffic times.

- 5. Shifting local supply to off-peak/off-peak times and routes enables traffic routes to be separated, but also requires certain safeguards according to labour law. Digitalisation makes it possible to use existing modes of public transport (tram, underground, buses) for deliveries, or to use journeys by private individuals through contact on internet platforms.
- 6. <u>Grouping deliveries together</u> is still more a dream of the future than an existing trend, as the large number of parties involved in the delivery process have to interact closely or needs to have a corresponding platform system that takes account of the ownership of goods, earnings for transport, costs of transshipment, etc. However, concentrating deliveries at specific times and, most importantly, in specific places offers immense potential for minimising traffic.

The Smart Order & Delivery research project provided proof of the viability of grouping delivery trips to pharmacies together, based on the example of pharmaceutical logistics

58

airlabs.at, retrieved on 17/07/2023

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Vienna Business Agency. A service offered by the City of Vienna (ed., 2021): Technology Report "Nachhaltige Urbane Logistik in Wien", wirtschaftsagentur.at/fileadmin/user\_upload/Technologie/Factsheets\_T-Reports/211029\_TR\_Nachhaltige\_Urbane\_Logistik\_in\_Wien\_DE.pdf, retrieved on 22/06/2023

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Vienna Chamber of Commerce: Wirtschaftskammer und Wien Energie testen neues E-Ladestellen-Konzept für Betriebe, news.wko.at/news/wien/Wirtschaftskammer-und-Wien-Energie-testen-neues-E-Ladeste.html, retrieved on 22/06/2023

61

www.remihub.at

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in Steyr. The project deployed an integrative logistics approach whereby ordering and transport were combined, thus reducing the number of B2B delivery trips to the essential.

HUBERT Stadtlogistik, a delivery service run by the Port of Vienna logistics centre, was tasked with sustainable and efficient supply to business and commercial enterprises in the City of Vienna. Goods are grouped together on the outskirts of the city and delivered using environmentally friendly vehicles. The project initiated intensive internal and inter-group discussions with a view to integrating HUBERT into the City Logistics Centre of Excellence of the City of Vienna. Ultimately, the aim was to transfer knowledge, high-quality customers and the HUBERT hardware. Currently a laboratory prototype, BündelHeinz is an additional service layer that operates between the existing players in the supply chain: customers, online retailers and logistics service providers. The goal is to restructure the order process for delivery service in online shopping in an innovative way, by grouping, optimising and awarding delivery orders to logistics service providers according to criteria based on the common good, and thus prevent traffic.

- 7. Shared services have now made their way into logistics in the infrastructure sector. Unlike developments elsewhere, the obstacles that stand in the way of collaboration between shared vehicles remain insurmountable for now. However, shared use of resources is already standard for consolidating and distributing goods, with shared city hubs and operator-independent delivery boxes (see Trend 4).
- 8. <u>Digitalisation</u> leads to process optimisation, prevents bottlenecks and increases efficiency and transparency in the supply chain through IoT technologies, data analysis and artificial intelligence.
- 9. <u>Multimodality and intermodality</u> are coming back into logistics. Rail is once again seen as an efficient means of transportation over long distances, while public attention has returned to the optimal use of different modes of transport. Different transport carriers have not been able to be linked quite as successfully as in passenger mobility due to turnover, but the use of innovative small vehicles, including electrically powered models, leads to new supply chains in urban centres.
- 10. <u>Innovative vehicle design</u> as in the case of cargo bikes, opens up uses in logistics. This trend has definitely arrived in Vienna, where e-bikes are already used extensively, especially for food deliveries and courier services.

# 2.5 Funding programmes in Vienna

The key framework conditions for funding in the mobility sector are set out in the Mobility Master Plan 2030 published by the BMK. The plan provides a strategic framework in the areas of road transport, public transport, freight transport, cycling and walking in order to make mobility in Austria sustainable over the long term and promote climate action. 63

Besides federal funding, the City of Vienna and other organisations also offer a number of funding programmes for urban mobility. A useful overview of current calls for proposals by the various organisations can be found in the BMK's overview of funding opportunities<sup>64</sup>, which summarises and provides access to all funding programmes of the federal government and provinces:

• BMK, Climate and Energy Fund & Kommunalkredit Public Consulting: 65, 66, 67 Projects relating to sustainable mobility, acquisitions and research receive funding from the BMK and the Climate and Energy Fund. KommunalKredit Public Consulting (KPC) manages the funding. Subsidies are available, e.g. for purchasing electric buses, electric cars and small electric vehicles, constructing cycle paths and establishing mobility management systems. The klimaaktiv mobil programme provides funding and mobility services for various target groups.

#### 63

Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology (2021): 2030 Mobility Masterplan – Realigning the mobility sector, <a href="https://www.bmk.gv.at/themen/mobilitaet/mobilitaetsmasterplan/mmp2030.html">www.bmk.gv.at/themen/mobilitaet/mobilitaetsmasterplan/mmp2030.html</a>, retrieved on 22/06/2023

#### 64

www.foerderkompass.at

#### 65

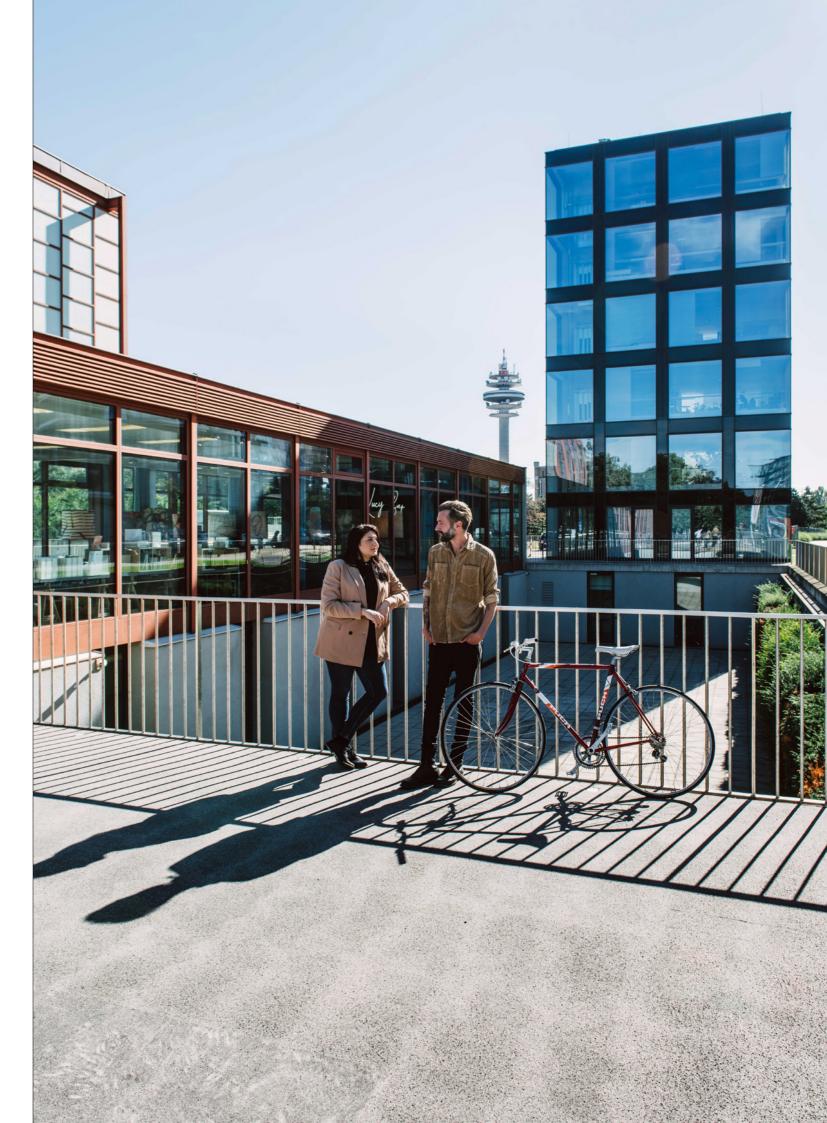
www.klimaaktiv.at/mobilitaet.html

#### 6

www.klimafonds.gv.at/ausschreibungen

#### 67

www.umweltfoerderung.at/betriebe





- Austrian Research Promotion Agency (FFG):<sup>68</sup> The FFG funds research and development projects in the field of mobility. These include projects to develop sustainable transport models or improve the energy efficiency of vehicles. There is also the option of making an open-topic submission if there is no current call for proposals in the current funding priorities.
- Vienna Mobility Agency:<sup>69</sup> The Vienna Mobility Agency offers advice and support for companies and institutions looking to make their mobility more sustainable. This might include drawing up mobility plans or implementing mobility checks. The Agency also handles City of Vienna funding for cargo bicycles for private individuals.
- SCHIG:<sup>70</sup> This rail infrastructure service company advises on funding issues and handles BMK funding programmes. Projects and investments in vehicles and charging infrastructure can be funded through the tendering procedure.
- <u>City of Vienna:</u><sup>71</sup> The City of Vienna primarily supports procurement and installations in the mobility sector. It funds the construction of bicycle parking facilities and the procurement of cargo bicycles.
- Vienna Business Agency: The funding programmes
  of the Vienna Business Agency support Viennese
  companies with investments, initiating collaborations,
  start-ups, marketing, etc., mostly on an open-topic
  basis.
- Vienna Chamber of Commerce: 73,74 In addition to its own subsidies, such as the electric vehicle subsidy for taxi companies, the Vienna Chamber of Commerce also offers a search engine for national funding streams.

www.ffg.at/foerderungen

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www.mobilitaetsagentur.at

70

www.schig.com

71

www.wien.gv.at/amtshelfer/finanzielles/foerderungen/#umwelt

72

wirtschaftsagentur.at/foerderungen/aktuelle-programme

73

www.wko.at/service/foerderungen/WKW\_Elektrische\_Taxis\_in\_Wien\_Zuschuss3.html

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www.wko.at/service/unternehmensfuehrung-finanzierung-foerderungen/foerderungen.html



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#### thinkport VIENNA

(BOKU, flagship project 2030)78

The Port of Vienna has set up an open innovation laboratory for urban freight logistics in cooperation with the University of Natural Resources and Applied Life Sciences. It aims to promote a culture of open innovation and support through collaboration between different players in the logistics and mobility sector, and to implement flagship projects. It investigates topics relating to logistics and supports networking and implementing needs-oriented solutions.

#### Community creates Mobility

This network was founded in 2019 to put forward ideas for new mobility concepts and bring together different perspectives and areas of expertise. The underlying idea is that mobility in a city or region can be developed more effectively through cooperation between municipalities, citizens, companies and public institutions. In Austria, pioneers in the mobility sector have come together to suggest new concepts. Since 2023, the Open Innovation Factory at the Austrian Federal Railways site at Praterstern has served as a community space and central meeting point for the network. In 2020, it published a joint manifesto setting out common positions and stating its commitment to mobility as a common good. The organisers meet regularly and publish blog posts on current topics of discussion.

#### O Vienna 2030 – other flagship projects

In 2019, the City of Vienna developed the VIENNA 2030 Economic and Innovation Strategy in consultation with experts from business, science and social organisations. The Vienna Economic Council ensures that specific flagship projects are implemented for the jointly defined key topics, including smart solutions for urban living space, and that these support the objectives of the Smart Climate City Strategy and ensure innovation and value creation in Vienna.<sup>80</sup>

The current technology report "Vienna's Economy on the Road to Net Zero" explains the latest climate-related flagship projects, including five initiatives in the field of mobility and logistics.

 Centre of Excellence for Electric & Hydrogen Drives (Wiener Linien)

Research and development project aimed at advancing the electrification of public transport in Vienna and making Wiener Linien a pioneer in the application of sustainable drive solutions. One focus of the project is the use of electric and hydrogen drives for buses and trams. Wiener Linien already operates a fleet of electric buses and is planning to steadily expand this over the coming years.

Öffi-Packerl (Wiener Linien)

A concept from Wiener Linien for researching and testing sustainable parcel transport on Viennese trams. It is currently looking into the extent to which passengers want to and are able to take parcels with them on their tram journeys and return them via parcel and transshipment boxes at stops. The project began in June 2022 and is due to end in February 2025.

The players involved in urban mobility development are becoming increasingly diverse. This means that in addition to mobility operators, consultancies and other well-known institutions, more and more projects, initiatives and laboratories are helping to shape Vienna's mobility.

#### Urban Mobility Labs

Austria has several government-funded mobility labs – also known as "living labs" or "real-life labs" – that investigate certain ideas and methods. The aim of these laboratories is to test newly developed ideas and solutions and thus enable the step up into implementation, in close collaboration between science and practice.<sup>75</sup>

The following urban mobility labs based in Vienna test out innovative mobility concepts and technologies:

#### aspern mobil LAB

(TUW MOVE, flagship project 2030)<sup>76</sup>

innovation centre for sustainable urban mobility. It is part of the aspern Seestadt development project, aimed at building a sustainable, modern city. The aspern.mobil LAB is a place for research, development and testing new mobility concepts and technologies, and seeks to establish and support a new culture of mobility and innovation.

 Mobility Policy Innovation Lab (UIV, flagship project 2030)<sup>77</sup>

The Mobility Policy Innovation Lab is a flagship project of the Vienna Economic Strategy VIENNA 2030. It provides a platform for the development, testing and implementation of new ideas and approaches in mobility policy.

- WieNeu+ (City of Vienna, Municipal Department 25) A City of Vienna project implemented by Municipal Department 25 – Technical Urban Renewal. Across six districts, it focuses on implementing innovative, integrated environmental and collaborative solutions for high-quality living, working, learning, getting around and living as a community. All are intended to make existing districts even more liveable and resource-efficient. The flagship project ran until 2019.
- Hydrogen Research Center Austria (HyCentA)
   HyCentA conducts research into hydrogen technologies for a holistic shift from fossil energy to green hydrogen and green electricity in mobility, industry, households and energy services. The flagship project is set to run until the end of 2026.
- Vienna Out Of The Box (Wiener Lokalbahnen)
   A concept launched by Wiener Lokalbahnen to develop the strategic direction of framework conditions for parcel logistics, both across disciplines and involving all of the key players. A network of publicly accessible "white label" parcel boxes was set up for this purpose.
- H2Real Model Hydrogen Region Vienna (Wien Energie)

Project to promote hydrogen technology, coordinated by Wien Energie. The aim of the project is the coordinated expansion of H2 production capacity and infrastructure to create a regional hydrogen economy. The H2Real project is part of the City of Vienna's Climate Action Strategy and should help to reduce CO2 emissions in the city while promoting new technologies and business opportunities. It was launched in 2023 and will run until the end of 2025.

#### Initiatives

In addition to funded laboratories, networks and flagship projects, a number of funded and private initiatives are helping to shape sustainable urban mobility for the future.

Better Mobility Accelerator:<sup>82</sup>

Punkt vor Strich, Impact Hub Vienna and Productized (Lisbon) and EIT Urban Mobility have launched an accelerator programme focusing on inclusion and mobility, which runs from June to December 2023. Start-ups from all over Europe can apply and receive support for developing innovative services, products and new business models. The programme is aimed at making mobility solutions safer, more affordable, more sustainable and more inclusive. Areas of focus include intermodality, active mobility, public space, inclusive workplaces and the mobility of the future.

Radlobby Wien<sup>83</sup>

Non-profit organisation in Vienna committed to making the city more bicycle-friendly and improving conditions for cycling. Radlobby Wien promotes cycling as an environmentally friendly, healthy and safe alternative to vehicle transport that can improve quality of life in the city.

Geht doch Wien<sup>84</sup>

The Geht doch Wien ("Go Vienna") initiative aims to improve conditions for pedestrians and is committed to making Vienna a city where it is safe, pleasant and convenient to walk.

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Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology: Die österreichischen Mobilitätslabore, <a href="mailto:time-number-fti-mobilitaetswende.at/de/artikel/mobilitaetslabore">tti-mobilitaetswende.at/de/artikel/mobilitaetslabore</a>, <a href="mailto:tti-mobilitaetswende.at/de/artikel/mobilitaetslabore">tti-mobilitaetswende.at/de/artikel/mobilitaetslabore</a>, <a href="mailto:tti-mobilitaetswende.at/de/artikel/mobilitaetswende.at/de/artikel/mobilitaetslabore">tti-mobilitaetswende.at/de/artikel/mobilitaetslabore</a>, <a href="mailto:tti-mobilitaetswende.at/de/artikel/mobilitaetslabore">tti-mobilitaetswende.at/de/artikel/mobilitaetslabore</a>, <a href="mailto:tti-mobilitaetswende.at/de/artikel/mobilitaetslabore">tti-mobilitaetswende.at/de/artikel/mobilitaetslabore</a>, <a href="mailto:tti-mobilitaetswende.at/de/artikel/mobilitaetslabore">tti-mobilitaetswende.at/de/artikel/mobilitaetslabore</a>, <a href="mailto:tti-mobilitaetswende.at/de/artikel/mobilitaetslabore">tti-mobilitaetswende.at/de/artikel/mobilitaetslabore</a>, <a href="mailto:tti-mobilitaets">tti-mobilitaetslabore</a>, <a href="mailto:tti-mobilitaetswende.at/de/artikel/mobilitaetslabore">tti-mobilitaetslabore</a>, <a href="mailto:tti-mobilitaets">tti-mobilitaetswende.at/de/artikel/mobilitaetslabore</a>, <a href="mailto:tti-mobilitaets">tti-mobilitaetslabore</a>, <a href="mailt

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www.mobillab.wien

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www.policylab.at

#### 78

www.thinkportvienna.at

#### 79

www.mobility.community

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City of Vienna: Strategie WIEN 2030 – Wirtschaft & Innovation, www.wien.gv.at/spezial/wien2030, retrieved on 22/06/2023

#### 81

Vienna Business Agency. A service offered by the City of Vienna, 2023: Die Wiener Wirtschaft auf dem Weg zur Klimaneutralität, wirtschaftsagentur.at/fileadmin/user\_upload/Technologie/Factsheets\_T-Reports/Wiener\_Wirtschaft\_am\_Weg\_zur\_Klimaneutralitaet\_Technologiereport\_DE.pdf, retrieved on 17/07/2023

#### 82

www.mobility.community/eit-better-mobility-accelerator

#### 83

www.radlobby.at/wien

#### 84

geht-doch.wien

Future mobility will be shaped by the goal of achieving climate neutrality by 2040. Vienna's mobility landscape and the means of transport that its citizens use will change significantly, moving away from fossil-fuelled transport and towards carbon-neutral modes and behaviours. Yet the climate targets are not achievable through supply improvements and new technologies alone. Climate-damaging technologies (especially fossil fuel-powered private transport) and behaviours (use of private cars in the city, parking cars in public spaces, journeys with low occupancy rates, long journeys by car, high traffic levels, etc.) must also be gradually regulated or made more difficult.

The extended ecomobility network will continue to increase its share in the modal split, with private cars becoming the exception on the roads. Public transport will form the backbone of mobility, supplemented by increased active mobility, i.e. shared vehicles and journeys in an integrated mobility system that is accessible via digital platforms. This will require comprehensive investment in the infrastructure and adjustments to the structure of the city itself. Public transport will need to be expanded or modernised, not only in terms of capacity but also in the form of extension to neighbouring municipalities and provinces, as very high car dependency can still be observed among commuters from such areas. The cycling infrastructure will be massively upgraded, both in terms of quantity (length of the route network, closing gaps, better connectivity) and quality: more space for cycling and walking in public spaces, efficient and rapid cycle connections to Vienna's suburbs, consistent structural separation from other modes of transport to improve quality and traffic safety, and the optimisation of traffic control and traffic light phasing to ensure the flow of active mobility traffic. In the same way, sharing and e-charging infrastructure will become more visible in public spaces as their density increases massively in a systematic roll-out. Traffic-reducing structures like the 15-minute city, super blocks and the Viennese Supergrätzl system will change the cityscape and make a significant contribution towards resource-saving, space-saving urban mobility. In especially innovative city districts, this will noticeably reduce traffic congestion, with the attendant positive effects on the population (health, quality of life, quality of time spent there, etc.).

In the future, mobility in Vienna will be supported by the use of modern technologies. The highest priority is consolidating or expanding the city's management capabilities. Intelligent traffic control systems collect and analyse real-time data to optimise traffic flows and avoid capacity bottlenecks. Digital solutions such as mobile apps and online platforms are increasingly being used to provide citizens with information on the current traffic situation, route planning and ticket booking. These measures can contribute to making traffic in Vienna more efficient, sustainable and user-friendly by responding to the relevant framework conditions (pollutant concentration, capacity utilisation, etc.) on a day-to-day basis.

The future development of logistics and freight transport will also be strongly oriented towards climate goals. Greater use of inner-city production and logistics locations (Vienna Business Districts, City Hubs, Port of Vienna, etc.) is essential in avoiding long transport routes. The conversion of vehicle fleets to alternative drives (electric cargo bikes, electric trucks, electric vehicle fleets, etc.) is set to gather pace thanks to new funding and advisory services. Joint use of scarce resources such as inner-city distribution centres and delivery boxes will also increase. The rediscovery of rail as an environmentally friendly form of transport for large volumes of goods will require increased cooperation between Vienna and the provinces of Lower Austria and Burgenland, especially in relation to railway connections.

Overall, future mobility in Vienna will be designed primarily to build on proven strategies and technologies that are close to implementation. The aim is to combine existing solutions in a sensible way and use them to establish a climatefriendly, affordable and inclusive integrated mobility system, step by step.



The objective of the Vienna Business Agency is the continuous development of international competitiveness by support-ing both Vienna-based companies and their innovative strengths, and the sustainable modernization of the city as a business location. To achieve this, the Agency provides free consultations to all entrepreneurs in Vienna on the topics of business creation, business location or expansion, business support and financing. Furthermore, networking contacts in the Viennese economy are also made available.

5.

The Vienna Business Agency supports and helps businesses complete their research and development projects with both individual consulting and monetary funding. Depending on requirements, they will receive information about sponsorships, financing opportunities, possible development partners, research service providers, or research infrastructure, according to their needs.

The Vienna Business Agency sees itself as a network of the Viennese Green Tech & Social Tech industry and supports businesses with consultations, as well with distribution and networking among themselves. Events and workshops on topics from the sustainability sector are held regularly.

Additionally, the Vienna Business Agency helps with company relocations or internationalization services. Assistance is provided to business founders and young entrepreneurs in the start-up area. Free workshops and training sessions on topics of everyday business are offered as well as small, affordable office spaces.

Founders Labs $^{\underline{85}}$  support aspiring entrepreneurs and founders with a two-month, part-time program to help them get started.

All funding programs of the Vienna Business Agency can be found here: <a href="mailto:viennabusinessagency.at/funding/programs">viennabusinessagency.at/funding/programs</a>



Vienna.

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viennabusinessagency.at/startup-and-grow/lets-talk-founding-1/founders-labs



Key players in Vienna

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The following table provides an overview of Viennese companies that are active in the city's mobility landscape or connected with it. It does not claim to be exhaustive. The list is arranged in alphabetical order according to the main focus of their services.

# Companies in the field of Urban Mobility

COMPANIES	DESCRIPTION	WEBSITE
0011117111120	Describer from	W250112
MOBILITY PROVIDE AND CHARGING INF	RS, MEANS OF TRANSPORT FRASTRUCTURE	
BIKE MOBILITY SERVICES	"Lease a Bike" is a bike leasing concept for companies, employees and the self-employed. Through this leasing model, employees make contributions from their salary, which allows them to save on the cost of purchasing.	www.lease-a-bike.at
DW SHARING GMBH (KIWIRIDE)	KIWIride offers e-scooters on a rental model via an easy-to-use app. The company currently provides e-scooters in Austria, Belgium, Italy, the Czech Republic, Slovakia and Switzerland.	kiwiride.at/en
EDDI MOBILITY GMBH	This Vienna-based bicycle subscription provider was founded in 2021. The EDDI Bike is an urban bike with a minimalist design, designed for the challenges of the urban jungle (light aluminium frame, anti-skid brakes and wide white tyres).	eddibike.com
ENIO	ENIO was founded in 2013 and is a leading tech company specialising in the control and management of electric mobility infrastructure (charging points). ENIO offers solutions for dynamic charging and energy management and provides support with implementing operational e-mobility strategies, from planning to operation.	www.enio-management.com
GREENINFRA GMBH/ECOTECH E.U./ GREENRIDE GMBH	Greenride was formed from the merger between Ecotech e.U. and GreenInfra GmbH. The company offers system solutions, e-mobility consulting, charging infrastructure for	www.chargepoint.at greenride.at

electric vehicles and innovative infrastructure. Greenride

also provides flexible electric vehicle rental.

COMPANIES	DESCRIPTION	WEBSITE
IBIOLA	ibiola enables small companies, large corporations, municipalities, public institutions and mobility service providers to come up with an appealing design for their mobility services, and digitally manage and optimise them. Through its three modules, ibiola offers high-performance solutions for all requirements and applications. The ibiola mobility platform can be easily integrated into existing systems like SAP via an API connection.	ibiola-mobility.com
INSTADRIVE	INSTADRIVE provides customers with a full package of services for purchasing electric cars. Along with crossbrand advice, this includes financing, insurance, registration, maintenance and the processing of finance, all covered by the monthly fee. It supports customers before and throughout the entire contract period via the INSTADRIVE online channels and the INSTADRIVE electromobility hotline.	insta-drive.com/at
MO.POINT MOBILITY SERVICES	MO.Point plans and operates shared mobility points in buildings and city districts. Residents and their neighbours can hire a variety of environmentally friendly vehicles such as electric bikes, electric cars and electric cargo bikes at affordable prices.	www.mopoint.at
ÖBB	The Austrian Federal Railways (ÖBB) are Austria's largest mobility service provider, transporting 323 million passengers and around 95 million tonnes of freight every year the climate friendly way. 100 per cent of the traction current comes from renewable energy sources. Through its ÖBB 360° programme, ÖBB also offers custom mobility solutions for communities, companies, tourism regions, housing developers and end customers. Other ÖBB mobility services are offered via the wegfinder app from iMobility GmbH (a 100 per cent subsidiary of ÖBB Personalverkehr AG) in the form of an Austria-wide mobility-as-a-service platform that enables easy access to a variety of different forms of transport. Besides public transport, sharing services such as e-scooters, car and bike sharing and on-demand solutions are also integrated into the app. App features range from multimodal route planning to booking of vehicles or tickets.	www.oebb.at wegfinder.at

COMPANIES	DESCRIPTION	WEBSITE
PARIS MADERNA	MCS Maderna Cycle Systems develops concepts and new vehicles in the field of transportation design for B2B and private clients. The goal of the company is to identify individual traffic solutions, especially in urban areas; to develop products which make the car dispensable and enable self-sufficient mobility. It covers everything from research and design to prototype construction, planning, pre-production preparation and custom-made products.	mcsbike.com
ROCKNROLLA BIKES & MORE GMBH	RocknRolla specialises in single-lane e-mobility in the B2B sector. The company's portfolio includes vehicles with speeds ranging from 25 km/h to 90 km/h and trailers. The RocknRolla mobility point is a micro-hub and communications centre delivering complete systems solutions.	www.rocknrolla.at
SCO2T - TSS TELCO SALES SERVICES GMBH	SCO2T offers fast and flexible rental of (electric) scooters in Vienna. TSS GmbH also offers IT and network solutions for the point of sale (POS) and advice and planning for the implementation of charging infrastructure.	www.sco2t.com tss.service-pos.at
SHARETOO	sharetoo is a station-based e-car sharing service from the VW Group. It is managed by ARAC GmbH (Europcar) and has a branch in Vienna. sharetoo Carsharing is one of the largest e-car sharing providers in Austria. WienMobil Auto, Wiener Linien's e-car sharing service, launched in conjunction with sharetoo in 2022.	www.sharetoo.at
SMATRICS	SMATRICS, which has been majority owned by Verbund AG since 2021, is a complete service provider in electromobility, offering software, hardware and services throughout the entire e-mobile value chain. SMATRICS EnBW is a joint venture between SMATRICS in Austria and EnBW Energie Baden-Württemberg AG in Germany. The joint venture claims to operate the largest nationwide high-power charging network in Austria.	smatrics.com
SWAPFIETS	Swapfiets, which is 100 per cent owned by Dutch company SwapThis Holding B.V., offers a bicycle subscription model in Vienna. The basic approach involves a bicycle service membership that includes service and repairs. Members can choose from city bikes and e-bikes, which can be booked as a monthly or half-yearly subscription.	swapfiets.at

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COMPANIES	DESCRIPTION	WEBSITE
VELLO	Unlike conventional bicycles, VELLO folding bikes are handy and versatile. They also feature special folding racks for bags. The ultralight folding VELLO bikes come in different models – with a belt or chain drive, chrome-molybdenum or titanium frame, and electronically or human powered.	vello.bike
VIBE MOVES YOU	vibe is a subscription model for electric cars. In just a few clicks, you can subscribe to the latest models of electric car in all vehicle classes and brands. Users can enjoy a flexible term of 6 to 48 months for a fixed monthly price. The price includes all costs, including registration, insurance, maintenance, winter tyres to motorway vignettes, plus claims management and arranging workshop appointments.	vibemovesyou.com
VOLTIA AT	The Voltia Group delivers the use of electric cargo vehicles as a service on a per-kilometre basis out of company offices in Vienna, The Hague, Brno (CZ), Gdansk (PL) and Bratislava (SVK).	www.voltia.com
WIENER STADTWERKE AND ITS CORPORATE DIVISIONS	Wiener Stadtwerke GmbH, owned by the City of Vienna, is an integrated mobility service provider employing around 15,000 people. Its corporate divisions address different areas of personal mobility and logistics in Vienna.	www.wienerstadtwerke.at
WIENER LINIEN	Wiener Linien is the number one transport provider in the metropolis of Vienna. It constructs and runs the metro, bus and tram network and ensures that 2.6 million passengers get to their destinations quickly, safely and comfortably every day. Its roughly 8,600 employees make a vital contribution to Vienna's superb quality of life. The Öffi Packerl concept from Wiener Linien is dedicated to researching and testing sustainable parcel transport on Viennese trams. It is currently looking into the extent to which passengers want and are able to take parcels with them on their tram journeys and return the parcels via parcel and transshipment boxes placed at stops. The project began in June 2022 and is due to end in February 2025.	www.wienerlinien.at

COMPANIES	DESCRIPTION	WEBSITE
WIENER LOKALBAHNEN	Wiener Lokalbahnen (WLB) operates the Badner Bahn tram-train service, runs several bus lines in the greater Vienna-Baden area and runs trains on third-party infrastructure throughout Austria. Through subsidiaries, it also runs Europe-wide rail freight transport and gets people with limited mobility to their destination in wheelchair-accessible minibuses. WLB's city logistics project WienBox offers a partner network for parcel and removal boxes that is open to all users. It brings together previously standalone box services from companies like A1, MYFLEXBOX, Renz, Variocube, Storebox and Tamburi, and displays their locations on wienbox.at.	www.wlb.at
WIPARK	WIPARK Garagen GmbH, founded in 1960, was Vienna's first garage operator. Today the company is one of the leading garage operators in Austria, with around 24,000 parking spaces across 80 locations. This widespread provision of parking restores the city to residents as a liveable space.	www.wipark.at
WIEN ENERGIE	Wien Energie is the largest regional energy provider in Austria. The company has expanded its charging network to 1,000 charging stations, with 100 per cent of the charging station electricity from renewable energies.	www.wienenergie.at
WIENER NETZE	Wiener Netze is Austria's largest combined network operator and a key stakeholder in maintaining and upgrading network infrastructure through the expansion of e-mobility.	www.wienernetze.at
UPSTREAM MOBILITY	This company has been on a journey towards digital transformation for years. Upstream – next level mobility GmbH was founded in early 2016 with the aim of expanding and operating its own digital infrastructure, diversifying its digital services and consolidating its profile as a key coordinator and point of contact for networked urban transport. The concept emerged from the "smile – simply mobile" research project, focusing on the combined use of public, collective and individual mobility services as an alternative to personal cars, all through a single app. WienMobil – developed by Upstream – enables Wiener Linien to link up different mobility options on the community platform and helps to develop the cities of tomorrow.	www.upstream-mobility.at
WIEN IT	WienIT is the central IT & business partner of the Wiener Stadtwerke Group and issues Wiener Linien annual tickets.	www.wienit.at

COMPANIES	DESCRIPTION	WEBSITE
RESEARCH, PLANN	ING AND CONSULTING	
ANDREW NASH	Andrew Nash is a transport and urban planner specialising in the fields of project management and development. His most recent work focuses on applying advanced information technologies in transport and urban planning.	andynash.com
AUSTRIAN INSTITUTE OF TECHNOLOGY	The Austrian Institute of Technology (AIT) employs more than 1,300 staff, making it the largest non-university research facility in Austria. The AIT is involved in many different mobility projects. The mobalance research project, for example, is developing an individual mobility account that indicates the maximum acceptable volume of emissions for every person living in Austria. This allowance can be consumed each month. But users also have the option of "saving" any unused amount and making transport and route choices with a view to ensuring that a balance remains in the account at the end of each month.	www.ait.ac.at
CMOBILITY INGENIEUR- BÜRO FÜR VERKEHRS- TELEMATIK E.U.	cmobility's activities focus on how people and new tech- nologies interact as part of mobility and information pro- cesses. It is primarily geared towards rolling out new drive technologies, especially developing charging infrastruc- ture, converting vehicle fleets and integrating renewable energy.	www.cmobility.at
DENKSTATT GMBH	The international denkstatt Group is a leading consulting company specialising in the environment, sustainability, mobility, energy, health and safety. denkstatt's urban mobility experts work with customers from the private and public sectors on sustainable corporate and municipal mobility and logistics concepts, from making employees' commutes greener to decarbonising logistics in the Vienna–Lower Austria metropolitan region.	<u>denkstatt.eu</u>
ECONSULT BETRIEBS-BERATUNGSGES.M.B.H	Econsult provides strategic and operational logistics consulting for companies, and plans and implements logistics systems. It also acts as a research and development partner for the logistics and transport industries in Austria and abroad. It addresses operational and public fields of action relating to the use of alternative modes of transport and urban freight transport, and hub, terminal and transshipment concepts.	www.econsult.at/de

COMPANIES	DESCRIPTION	WEBSITE
FACTUM	Factum is a private research institute with a focus on sustainable mobility, playing a significant role in the development of innovative solutions in the areas of mobility and infrastructure. (I need to check whether more text is coming. Otherwise we'll leave it as it is.)	www.factum.at
HERRY CONSULT GMBH	HERRY Consult is a private consultancy firm with core competencies in the areas of mobility research and mobility management, road maintenance cost calculations, the analysis of goods transport and traffic modelling.	www.herry.at
INNOVACTIVE HANDELS GMBH	LadeLeistung.at, a website from InnovActive GmbH, offers expertise on all things e-mobility, from the electrification of vehicle fleets and planning, implementing and operating your own charging infrastructure to e-bikes and e-scooters. InnovActive offers a wide range of active and e-mobility services and supports companies with finding their ideal modern and sustainable mobility solution.	www.innovactive.at
KOMOBILE GMBH	The engineering firm for transport planning and traffic engineering covers the entire range of transport and mobility planning services – from municipal and regional transport planning, transport modelling and micro-simulation to the design, moderation and management of processes.	komobile.at
MC MOBILITY CONSULTANTS	MC Mobility Consultants provides global consultancy, planning, management and integration services for all modes of transport, serving private and public companies as well as urban and rural goods and passenger transport authorities.	vienna-mc.com
MOBIMERA FAIRKEHRS- TECHNOLOGIEN KG	mobimera specialises in addressing technical issues in the design, planning and analysis of traffic systems. The company focusses on research in the area of microsimulation and applying this to actual projects.	www.mobimera.at
MOBYOME	mobyome KG develops visions, ideas and tools for a new understanding of alternative mobility solutions in small towns and rural communities. It supports communities and regions in introducing, operating and developing optimised transport systems ready for mass implementation, in particular by implementing modern information and communication technologies.	www.mobyome.at

COMPANIES	DESCRIPTION	WEBSITE
NAST CONSULTING ZIVILTECHNIKER GESMBH	nast consulting's range of services covers the full spectrum of traffic planning: traffic engineering, traffic safety, traffic infrastructure planning, traffic management, environmental impact assessments and R&D.	www.nast.at
NETWISS OG	netwiss OG focuses on research and development in the field of transport and mobility. It has particular expertise in managing Austrian and international consulting and research projects, implementing and conducting external quality assurance in surveys, linking people with experts in devising, planning and implementing scientific and other events, and developing and operating tech-based products and solutions.	www.netwiss.at
PUNKT VOR STRICH GMBH	Punkt vor Strich has many years of experience in research, innovation and technology. In collaboration with partners, they use and leverage the full potential of future-oriented mobility at all levels – socially, economically and environmentally.	www.punkt-vor-strich.at
QUINTESSENZ ORGANISATIONS- BERATUNG GMBH	The company is active in mobility research and planning, and endeavours to create mobility solutions for people, companies and communities that meet their needs. Quintessenz helps people and organisations shape and realise their options and viewpoints, harnessing the development potential and innovative nature of the respective situation.	www.quintessenz.or.at
RAUM & KOMMUNIKATION GMBH	raum & kommunikation is an interdisciplinary planning firm focusing on innovative residential construction, urban development planning and new urban mobility solutions. It conducts research, provides policy advice, is instrumental in planning at city and district level, and provides process support and process control.	www.raum-komm.at
PLANUM FALLAST & PARTNER GMBH	PLANUM, a transport engineering consultancy, has many years of experience in transport and environment in Austria and abroad, including energy planning, spatial planning, mobility concepts, traffic and environmental studies, land-scape design and much more. All are complemented by the management team's background in university research and teaching.	www.planum.eu

COMPANIES	DESCRIPTION	WEBSITE
RAUMPOSITION OG	Raumposition designs viable strategies and concepts for the spatial development of locations, districts, municipal- ities and regions. It identifies pathways for action in com- plex planning tasks and provides support in the form of custom planning procedures and appropriate control in- struments.	www.raumposition.at
ROSINAK & PARTNER ZT GMBH	Rosinak & Partner focuses on mobility planning and consulting. Its core areas of expertise include traffic engineering, mobility technologies, logistics, spatial planning and geographical information systems.	www.rosinak.at
SNIZEK+PARTNER VERKEHRSPLANUNGS GMBH	This company deals with a wide range of transport planning issues, such as devising mobility concepts, conducting traffic analysis, producing reports and providing consulting services in collaboration with partners from different disciplines, including at an international level.	www.snizek.at
SPIRIT DESIGN – INNOVATION AND BRAND GMBH	Spirit Design specialises in innovation and branding in the mobility sector, among other areas. The company also conducts its own research into future mobility solu- tions and is currently involved in areas such as alternative drives, e-mobility, intermodality and consistent usability design.	www.spiritdesign.com
STADTLAND DIPLING. SIBYLLA ZECH GMBH	stadtland's works includes creating plans for the future use and design of urban and rural areas, including plans for bicycle garages in densely built-up urban districts.	www.stadtland.at
STADTPSYCHOLOGIE	STADTpsychologie offers expertise in dialogue-oriented urban development. It views cities as beings, with all of the strengths and weaknesses that this implies. It addresses the entire "city being" – all the people who live and work in a city – and is particularly concerned with social cohesion. This is an effective way of managing crises while at the same time fostering a positive attitude to life in the city.	stadtpsychologie.at
TBW RESEARCH GESMBH	tbw research focuses on R&D in the areas of transport & mobility, energy & bio-resources, water and construction. Core competencies in mobility are used in developing innovative, sustainable mobility solutions and R&D in the areas of electromobility and autonomous driving.	tbwresearch.org

COMPANIES	DESCRIPTION	WEBSITE
TECH MEETS LEGAL GMBH	Tech Meets Legal GmbH aims to bring lawyers and scientists together and support them by providing access to media content (e.g. data protection, social media, etc.) via the Legal Expertise Knowledge Base. It also offers an easy way of arranging a non-binding B2B meeting. The company is strongly focused on the legal aspects of mobility as a service (MaaS) and autonomous driving. Current projects include Gemma (gender-sensitive mobility analysis), Kassa.Ast (a mobility hub for motorway junctions), and much more.	techmeetslegal.at
TRAFFIX VERKEHRS- PLANUNG GMBH	TRAFFIX Verkehrsplanung GmbH specialises in consulting and planning services in the mobility sector. The company has expertise in town and street design, traffic safety, mobility management, modelling, forecasting and performing test procedures.	www.traffix.co.at
LOGISTICS AND DEL	LIVERY SERVICES	
ADVELO – PROMOTIONBIKE	advelo develops and constructs individual attachments for cargo bicycles and hires out specially designed (cargo) bicycles from its own fleet. Thanks to the design and advertising concept, cargo bikes become promotional bikes designed to be multifunctional.	www.advelo.at www.cyclecraft.at
BYRD	byrd is a dispatch and logistics company focussing on facilitating the dispatch of packages for companies and online shops. On request, a byrd courier will collect items from the customer and bring them to the byrd warehouse, where they will then be packed into batches and dispatched. With its all-in-one logistics tool, byrd offers powerful software to optimise fulfilment and ensure maximum transparency in the supply chain.	getbyrd.com
ERIVE.DELIVERY DER ERIVE GMBH	Since 2018, GREEN TO HOME has offered efficient, reliable and environmentally friendly parcel pick-up and delivery. Benefits and services are currently managed under the ERIVE.delivery brand umbrella. Private individuals can have their orders delivered by electric vehicles, emission-free. Companies can also integrate ERIVE parcel logistics into their business operations.	erive.eu

COMPANIES	DESCRIPTION	WEBSITE
GOODVILLE MOBILITY	Goodville has been developing urban two-wheeler concepts for companies since 2013 under the slogan "Bikes for Business". It believes that the bicycle will be the primary means of transport in the city of the future. From delivery services to architectural competitions, branded bikes to research projects, it's all about punctuality, saving time, space and costs, and reducing emissions, particulates, noise and stress. And, most importantly, about ensuring quality of life in the city.	goodville.at
HEAVY PEDALS	Heavy Pedals has been working on sustainable city logistics using cargo bikes since 2009, for both private and commercial use. Besides sales, rental and repairs, Heavy Pedals also operates its own logistics division covering the "last mile" in Vienna.	heavypedals.at
MOTIC LOGISTICS SOLUTIONS	Start-up Motic GmbH has developed an e-cargo bike as a green solution to logistical challenges for short-distance transport within premises and in the last mile delivery sector. The Cargobeast now covers all sorts of routes – on company premises, cycle paths and roads.	www.motic-ls.com
RITA BRINGTS	Rita bringts is Vienna's first delivery service for vegetarian dishes. The freshly cooked organic food is delivered by cargo bikes. Rita bringts also offers catering.	www.ritabringts.at
SCHENKER & CO AG	DB Schenker offers services for all types of transport, forwarding services, etc. and is one of the largest transport companies in Austria. Its portfolio also includes air freight, waterways, intermodal and project logistics, and it is working on sustainable logistics for the future.	www.dbschenker.com/at-de
VELOCE	Since 1987, veloce has been offering B2B and B2C delivery of devices, documents, refrigerated goods and more, up to a weight of 1,000 kg. 200 couriers and a professional team at the headquarters ensure perfect delivery service every day.	veloce.at

COMPANIES	DESCRIPTION	WEBSITE
FEDERAL GOVERNM	MENT/CITY/ADMINISTRATION	
MINISTRY OF CLIMATE ACTION, ENVIRONMENT, ENERGY, MOBILITY, INNOVATION AND TECHNOLOGY (BMK)	The BMK is responsible for a broad range of areas of major and long-term significance for the lives of Austria and its citizens. The BMK sets the course for sustainable, climate-friendly policy and economic conditions, while also regulating and managing traffic on Austria's routes by land, air, water and rail, ensuring the energy supply, conducting research, cultivating innovative Austrian-made technologies and implementing the mobility of the future today.	www.bmk.gv.at
AUSTRIAN RESEARCH PROMOTION AGENCY (FORSCHUNGS- FÖRDERUNGS- GESELLSCHAFT, FFG)	The FFG is the Austrian funding agency for business-related research, development and innovation. It provides information and advice on 15 different topics and focus areas. Particularly important services include the jobs portal, the project database, the FFG funding support service and the FFG funding pilot website. The FFG ecall gathers all project submissions, reporting and communication together on one platform.	www.ffg.at
PORT OF VIENNA	The Port of Vienna, the largest logistics centre in Eastern Austria, is connected to road, rail and water infrastructure. The Port of Vienna is a company of the City of Vienna and a subsidiary of Wien Holding. Covering an area of 3 million square metres, it serves as a trimodal logistics hub with across its three ports of Freudenau, Albern and the Lobau oil port. Located on the three Trans-European Transport Network (Ten-T) corridors, it is one of the most important hinterland hubs in Europe, especially for the large North Sea and Adriatic ports.	www.hafen-wien.com
MOBILITÄTSAGENTUR WIEN GMBH (VIENNA MOBILITY AGENCY)	The Vienna Mobility Agency is conceived as an intermediary between the people, administration and politics. The agency aims to make walking and cycling in the city easier, more convenient and safer. The agency is the best contact point for any individuals wishing to offer concrete suggestions for improvements to pedestrian and cycling traffic, or who wish to offer criticism. More information on ongoing activities can be found at <a href="https://www.wienzufuss.at">www.wienzufuss.at</a> or <a href="https://www.fahrradwien.at">www.fahrradwien.at</a> .	www.mobilitaetsagentur.at

COMPANIES	DESCRIPTION	WEBSITE
SCHIG MBH	SCHIG mbH is a centre of excellence for railways in Austria. In recent years, its remit has grown enormously and includes official activities, management support for the Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK), managing funding programmes and provision of services on the market.	www.schig.com
CITY OF VIENNA	In Vienna, mobility issues are primarily handled by the Innovation, Urban Planning and Mobility business group, in administrative departments 18 (Urban Development and Planning), 21 A/B (District Planning and Land Use), 28 (Road Management and Construction), 46 (Traffic Management and Organisation), 65 (Legal Affairs: Transport and Traffic), and 67 (Supervision of On-Street Parking).	www.wien.gv.at
UIV URBAN INNOVATION VIENNA (VIENNA CLIMATE AND INNOVATION AGENCY)	Vienna's climate agency for sustainable and innovative urban development specialises in advising on smart, urban solutions and assisting Vienna's municipal policy makers and the city administration with developing and implementing strategies. They communicate best practice from Vienna and analyse trends for smart applications in consultation with other cities and regions.	urbaninnovation.at
ENVIRONMENT AGENCY AUSTRIA	The Environment Agency is one of Austria's leading specialist environmental institutions and one of the leading advisory environmental services in Europe. 450 specialists from 55 scientific disciplines are working to develop solution strategies for politics and economy. The agency has published the Mobility Status Report, among others.	www.umweltbundesamt.at
IT SOLUTIONS/AI/A	APPS/DATA	
ANDATA	ANDATA (Analysis of complex DATA) is an independent engineering firm for technical mathematics and machine construction, specialising in the application of methods from the fields of data mining, artificial intelligence and soft computing procedures in combination with the extensive use of numerical simulation in technical development. ANDATA delivers a range of modular building block solution packages in the form of VERONET (VerkehrsRegelungsObjektNetzwerk), which revolutionises traffic control and management. These "building blocks" can be applied either individually or in the preferred combination.	www.andata.at www.veronet.eu

COMPANIES	DESCRIPTION	WEBSITE
BEEANCO	Beeanco is a digital platform for fair and sustainable products and services. Among other things, it serves as a sustainable marketplace for mobility-related products and services.	www.beeanco.com
FLUIDTIME	Fluidtime is leading international technology provider in the field of mobility information systems. Since 2004, Fluidtime has been developing, operating and delivering user-friendly software solutions and mobile services to customers in the areas of integrated mobility, traffic data management and transport operator services.	www.fluidtime.com
GOURBAN E-MOBILITY GMBH	goUrban was founded in 2016 and launched its own e-moped fleet in Vienna. Two years later, the company developed an operating system for shared mobility providers, corporate fleets, cities and municipalities. By integrating other partners, goUrban offers a mobility ecosystem that seamlessly connects different options like car sharing, kick scooters and moped sharing to help operators optimise their success. goUrban now has a presence in 100 cities and offers its customers a network of over 30,000 vehicles.	gourban.at
HAS.TO.BE	has.to.be product be.ENERGISED, delivers a cloud-based management and accounting solution for electric vehicle charging infrastructure requirements. The be.ENERGISED COMMUNITY offers every participant the opportunity to manage their charging stations in real time and evaluate the charging process.	has-to-be.com
IMPACTIT: PORTATOUR	portatour is a personal automated route planner for field services in sales, consultancy and service. Users can use the service to ensure they visit A, B, and C customers at appropriate intervals. portatour automatically selects the next customer to visit while also optimizing the driving route.	www.portatour.com/de
ITS VIENNA REGION/ TRANSPORT ASSOCIA- TION FOR VIENNA, LOWER AUSTRIA AND BURGENLAND (VER- KEHRSVERBUND OST-REGION, VOR)	Intelligent Transport Systems (ITS) is the centre of expertise for the three Austrian provinces of Vienna, Lower Austria and Burgenland. It is tasked with collecting, processing and developing digital data into innovative services and supporting the provinces and partners with expertise, with the aim of achieving a more environmentally conscious approach and greater efficiency and safety in day-to-day transport operations.	www.its-viennaregion.at

COMPANIES	DESCRIPTION	WEBSITE
IVISO	IVISO GmbH is a service provider in the area of sensor-based environmental modelling, with a strong presence in the automotive industry. Essential services include algorithms and high-performance environmental perception software development for autonomous vehicles and robots.	www.iviso.at
KAPSCH TRAFFICCOM	Kapsch TrafficCom is a provider of intelligent transporta- tion systems in the fields of tolling, traffic management, smart urban mobility, traffic safety and security and con- nected vehicles.	www.kapsch.net/ktc
KRUCH RAILWAY INNOVATIONS GMBH & CO. KG	Railway infrastructure provider KRUCH specialises in signalling and catenary systems and network analysis, and operates in the business area of Mobility 4.0, simulating and analysing power flows in catenary systems and monitoring catenary networks in real time.	www.kruch.com
MYNEXTGARAGE	As the world's first online garaging platform, MyNextGarage delivers a user-friendly system for booking and renting long-term parking places.	www.mynextgarage.at
NEXT:URBAN TECHNOLOGIES GMBH	Next:urban develops passenger information systems including "urban station", a stationary e-paper display for bus stops. Along with the planning and preparation of technical components, the company focusses on the IT systems that prepare the information.	nexturban.at
NTT DATA	The company offers data-based services for customer experience, cybersecurity, data & intelligence, intelligent automation, IoT and IT optimisation, with a particular focus on the transport and logistics sector.	de.nttdata.com
PAVE COMMUTE (CARPLOYEE GMBH)	Carployee offers an intelligent ride-sharing app called Pave Commute for daily commuting. Pave Commute rewards people for travelling sustainably on their commutes to work and home. The app registers travel by bike, public transport or car sharing and measures the resulting carbon savings. Points can be collected with every trip, and rewards earned periodically.	www.carployee.com

COMPANIES	DESCRIPTION	WEBSITE
PAYUCA	Free parking spaces in private garages can be found quickly and easily, flexibly booked and paid for using the eponymous app from PAYUCA. In the context of a Smart City solution, the installation of the company's unique access system gives real estate owners the option of making use of empty spaces in their garages. The smarter use of already existing private parking spaces unleashes great potential to reduce search traffic and free up public space.	payuca.com
PROGRESSIVE MINDWORKS	This company uses the software package PackViz to optimise the loading of goods into transport containers and the planning of loading processes (project).	progressivemindworks.com
TRAIVELLING GMBH	Traivelling is an online travel agency exclusively for train travel. It was founded in 2019 with the aim of rectifying the paucity of opportunities for train travel abroad. The Traivelling team is currently working on an online booking platform where you can obtain detailed information and book ticket packages for train journeys across Europe, Asia and North Africa reliably, inexpensively and quickly.	www.traivelling.com
TRIPLY	Triply offers data-driven mobility analysis, enabling private companies and public organisations to grasp existing mobility situations and design safe and sustainable mobility options.	triply.net/de
TTTECH	TTTech is particularly well-known for its autonomous driving software solutions, but the company is also active in other sectors such as air travel, industry and agricultural machinery. Activities in the area of autonomous driving are outsourced to TTTech Auto. Competencies in the area of control units (ECUs) and displays are pooled in TTControl.	www.tttech.com
UBIQ	Ubiq believes that shared mobility services have the potential to change cities and make them quieter, cleaner and greener. Ubiq closes the gap between supply and demand by offering solutions that address the shared mobility industry's biggest challenges – usage, billing and pricing – with the aim of making shared mobility profitable and sustainable.	www.parkbob.com

COMPANIES	DESCRIPTION	WEBSITE
SOCIETIES, ASSOC	IATIONS AND INITIATIVES	
AGENDA BAHNINDUSTRIE FRAUEN (AGENDA FOR WOMEN IN THE RAILWAY INDUSTRY)	This network seeks to draw upon expertise, take a stance, represent women's perspectives, help shape the environment in the rail industry and address sustainability and diversity with a focus on mobility and the economic situation. The railway industry is developing safe, environmentally friendly mobility for everyone. Future mobility must reflect the lifestyles and needs of everyone, so women must actively help to shape the rail industry.	agendabif.at
ARBÖ	The Car, Motor and Cyclist Association of Austria (ARBÖ) is an Austrian travel association and NGO that represents drivers' interests. With around 420,000 members, it is the second largest association of its kind in Austria. It was founded on 30 April 1899 in Vienna as the Association of Austrian Workers' Cycling Clubs. ARBÖ is a founding member of the Association of European Automobile Clubs (EAC), based in Brussels.	www.arboe.at
ASPERN MOBIL LAB (TUW MOVE, PILOT PROJECT 2030)	The aspern.mobil LAB is a centre of innovation for sustainable urban mobility. It is part of the aspern Seestadt development project, aimed at building a sustainable, modern city. The aspern.mobil LAB is a place for research, development and testing new mobility concepts and technologies, and seeks to establish and support a new culture of mobility and innovation.	www.mobillab.wien
AUSTRIATECH AND OLÉ – AUSTRIA'S NATIONAL COMPETENCE CENTRE FOR ELECTROMOBILITY	AustriaTech works closely with the Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK) and undertakes a range of tasks relating to transport technologies. Its experts maintain close contact with national and international stakeholders, with the primary objective of promoting an open exchange. In its role as Austria's competence centre for electromobility, OLÉ supports the development of measures for decarbonising road transport. Since December 2022, OLÉ has been Austria's main point of contact for the e-mobility community, both within the country and internationally. One of its key tasks is to advise and support the BMK.	www.austriatech.at/de/ leitstelle-elektromobilitaet

COMPANIES	DESCRIPTION	WEBSITE
BUNDESVERBAND EMOBILITY AUSTRIA – BVE	In 2013, a group of innovators founded the BVe (originally BieM Austria) to promote e-mobility. The group is made up of representatives of Austrian companies and local authorities, as well as experts from business and science. BVe aims to break down barriers to the implementation of e-mobility solutions and disseminate successful applications and developments. It brings users and providers together in a national platform, providing information and supporting implementation.	www.bve.or.at
COMBINET – COMBINED TRANSPORT NETWORK	Leading companies from different areas of the Austrian transport industry have come together in the CombiNet network to promote combined transport as a green solution for freight transport. Its members are now optimally connected experts in intermodal transport solutions. Their extensive expertise, deep experience and unbridled enthusiasm for combined transport guarantee the sustainable development of freight transport.	www.combinet.at
COMMUNITY CREATES MOBILITY	Mobility designers came together to launch the "Community creates Mobility" movement in spring 2019 to amplify ideas for new mobility concepts. The network brings together a range of perspectives and expertise from established companies, start-ups, civil society and scientific and public institutions, and is constantly growing. The ÖBB Open Innovation Factory has hosted the community since 2023.	www.mobility.community
DAMENLOGISTIKCLUB	DamenLogistikClub (DLC) is the Austrian network for women in logistics. Its members include over 100 Austrian decision-makers in the transport and logistics industries, as well as logistics specialists and managers from industry and trade and key leaders from the BMK, the Chamber of Commerce and logistics associations.	www.damenlogistikclub.com
GEHT DOCH WIEN	The Geht doch Wien ("Go Vienna") initiative aims to improve conditions for pedestrian traffic and is committed to making Vienna a city where it is safe, pleasant and convenient to walk.	geht-doch.wien

COMPANIES	DESCRIPTION	WEBSITE
H2REAL - HYDROGEN MODEL REGION VIENNA (WIEN ENERGIE)	The H2Real project is coordinated by Wien Energie and aims to promote hydrogen technology in Vienna and create a regional hydrogen economy through the coordinated expansion of H2 production capacity and infrastructure. The H2Real project is part of the City of Vienna's Climate Action Strategy and should help to reduce CO2 emissions in the city while promoting new technologies and business opportunities. It was launched in 2023 and will run until the end of 2025.	positionen.wienenergie.at/ projekte/mobilitaet/wiener- wasserstoff
HYDROGEN RESEARCH CENTRE AUSTRIA (HYCENTA)	The Hydrogen Research Center Austria (HyCentA) is a research centre for hydrogen technology. It conducts research into hydrogen technologies for a holistic shift from fossil energy to green hydrogen and green electricity in mobility, industry, households and energy services. The pilot project is set to run until the end of 2026.	www.hycenta.at
CENTRE OF EXCEL- LENCE FOR ELECTRIC & HYDROGEN DRIVES (WIENER LINIEN)	The Wiener Linien Centre of Excellence for Electric & Hydrogen Drives is a central research and development project aimed at advancing the electrification of public transport in Vienna and making Wiener Linien a pioneer in the application of sustainable drive solutions. One focus of the project is the use of electric and hydrogen drives for buses and trams. Wiener Linien already operates a fleet of electric buses and is planning to steadily expand the fleet over the coming years.	smartcity.wien.gv.at/wiener- linien-setzen-auf-oeko-busse
ÖAMTC	The ÖAMTC is Austria's largest transport association and is an active member of a global network of mobility clubs. It is an economically and politically independent association.	www.oeamtc.at
POLICY LAB (UIV/PILOT PROJECT 2030)	In its "Mobility transition now!" project, the Policy Lab supports the development and implementation of sustainable mobility measures with comprehensive expertise and custom solutions. Its focuses on challenges and tasks referred to it by the federal government, provinces, regions, cities, municipalities and other public authorities. The Policy Lab examines the current situation, existing approaches, specific constellations of stakeholders and current barriers to implementation. On that basis, it compiles a needsbased set of support measures for the implementation of future-oriented mobility measures is compiled and implemented from the lab's service portfolio.	www.policylab.at

COMPANIES	DESCRIPTION	WEBSITE
RADLOBBY WIEN	Radlobby Wien is a non-profit organisation in Vienna that is committed to making the city more bicycle-friendly and improving conditions for cycling. It is part of the Austrian umbrella organisation Radlobby Austria. Radlobby Wien promotes cycling as an environmentally friendly, healthy and safe alternative to car traffic that can improve quality of life in the city.	www.radlobby.at/wien
SCHULTERBLICK CYCLING SCHOOL	Schulterblick helps children, young people and adults learn to cycle safely and confidently and discover the joy of being together. It aims to give course participants the ability to integrate bicycle mobility into their everyday lives.	www.schulterblick.at
THINKPORT VIENNA (BOKU, PILOT PROJECT 2030)	thinkport Vienna is an open innovation laboratory for urban freight logistics. It promotes a culture of open innovation and support through collaboration between different players in the logistics and mobility industry. It investigates topics relating to logistics and supports networking and implementing needs-oriented solutions.	www.thinkportvienna.at
VCÖ – MOBILITÄT MIT ZUKUNFT	Founded in 1988, VCÖ – Mobilität mit Zukunft (Mobility for the Future) is a community-oriented organisation specialising in mobility and transport. VCÖ draws upon its store of knowledge to advocate for a climate-friendly, economically efficient and socially just transport system. Among other things, VCÖ awards the VCÖ Mobility Prize, Austria's largest competition for sustainable mobility. The VCÖ website offers several hundred publicly accessible infographics, an online database with more than 2,000 best-practice examples, comprehensive data, publications and fact sheets on the topic of environmentally friendly mobility.	<u>vcoe.at</u>
VERSUS DESIGN	VERSUS DESIGN is a product and service design agency working to develop smart, economic and sustainable solutions – in the area of transportation and urban mobility, among others.	versus-design.at
VIENNA BUSINESS DISTRICTS	The Vienna Business Districts organisation assists companies and organisations with real estate and funding requirements and connects them with the right contacts. It gathers information about developments and resource-efficient businesses in their respective areas and acts as a local service partner.	www.viennabusinessdistricts.at

COMPANIES	DESCRIPTION	WEBSITE
WIENEU+ (STADT WIEN, MA25)	WieNeu+ is a City of Vienna project implemented by Municipal Department 25 – Technical Urban Renewal. In six city districts, it seeks to implement innovative, integrated environmental and collaborative solutions for high-quality living, working, learning, getting around and living as a community that are intended to make existing districts even more liveable and resource-efficient. The pilot project continued until 2019.	wieneuplus.wien.gv.at
WIMEN – WOMEN IN MOBILITY, ENERGY & ENVIRONMENT NETWORK	WIMEN is involved in mobility, public space, energy, environment and gender and creates space for (interdisciplinary) discussions, networking, exchange of experiences and collaboration. It endeavours to consider and highlight the gender perspective in specific topics, stimulate change by raising awareness, set an example, encourage diversity and raise the profile of female experts.	www.wimen.at
WOMEN IN MOBILITY (WIM) – AUSTRIAN HUB	Women in Mobility is committed to improving the visibility of women in the mobility industry – in leadership positions and project management, as speakers at conferences and as experts in specialist media. It offers women – decision makers, doctoral students, business leaders, founders, scientists, students and employees alike – a platform for networking, joint projects, collaboration and exchange, whether they are coming from established companies, start-ups, organisations and associations, the media or politics.	www.womeninmobility.org/ oesterreich

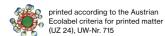


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REACT-EU ALS TEIL DER REAKTION DER UNION AUF DIE COVID-19-PANDEMIE FINANZIERT.



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# **Text and Editing**

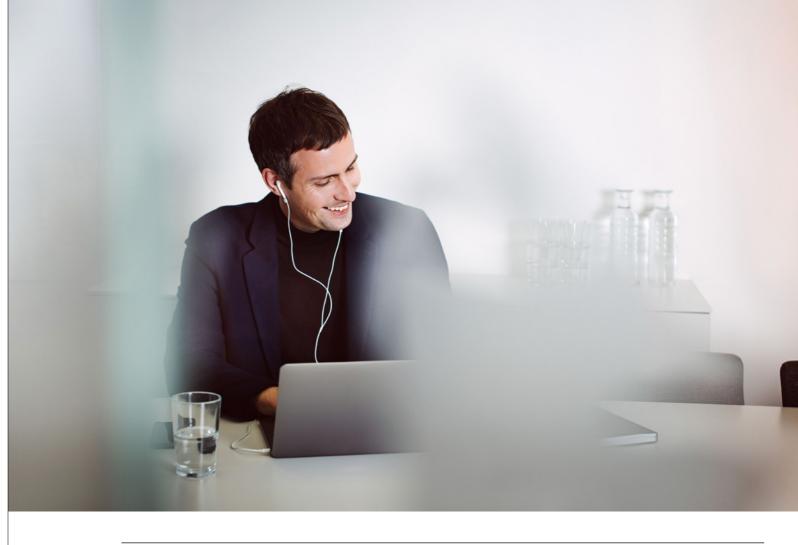
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### **Photos**

Vienna Business Agency/Karin Hackl

The Project "Fit für die Zukunft" contributes to the development of corporate research and innovation activities in Vienna, encourages cooperation and awakes enthusiasm for research and innovation among young Viennese. Additional information on the www.efre.gv.at/en

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Technology reports are available on the following topics:

- Additive manufacturing
- Assistive Technologies
- Big Data and Al
- Blockchain
- Circular construction
- City Logistics
- Cloud Computing
- Data Sharing
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- Digital Planning, Building and Operation
- e-Commerce
- e-Government
- e-Health
- Enterprise Software
- Entertainment Computing
- FinTech
- Food
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- Open Source/Open Standards
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- Urban Foodtech
- Urban Mobility
- User Centered Design
- Vienna's Economy on the Road to Net Zero
- Visual Computing

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Chapter 7, Imprint





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