



Sustainable Urban Logistics in Vienna

Technology
Report

Vienna,
August 2021

Dear readers,

Vienna is one of the world's most successful cities when it comes to sustainable innovation. About 9,200 companies in Vienna work in the field of urban and environmental technologies. More than 90,000 people generate an annual turnover of around 40 billion euros, which corresponds to 16 percent of the total turnover of all Viennese companies.

Vienna scores highly for its innovative strength, comprehensive support for start-ups and a strong focus on sustainability. It is also at the top of several "smart city" rankings. The key objective of the Vienna Smart City Framework Strategy¹ is to continue to guarantee the highest quality of life while conserving resources to the greatest extent possible. To achieve this goal, the Vienna city administration signed a coalition agreement in January 2021 that aims to cut greenhouse gas emissions to net zero by 2040. Vienna will thus have achieved climate neutrality!²

The location also offers an attractive, research and technology-friendly climate, geographical and cultural proximity to the growth markets to the east, a high-quality infrastructure and education system and, last but not least, the highest quality of life in the world.

Vienna's economic and innovation strategy "WIEN2030"³ defines six key issues where the city aims to rank as a global leader in the next ten years and to produce particularly powerful innovations ("Viennese solutions"). One of these key topics concerns the development of smart solutions for cities, i.e. innovations to combat climate change and increase sustainability in energy production, mobility and urban development.

This Technology Report will provide an overview of a wide range of trends and developments in the field of "sustainable urban logistics" along with a selection of companies that are active in this field in Vienna.

We hope you enjoy reading it!
Your Vienna Business Agency team



1
Smart City Rahmenstrategie – www.wien.gv.at/stadtentwicklung/studien/pdf/b008551.pdf (in German)

2
Koalitionsabkommen Wien – www.wien.gv.at/regierungsabkommen2020/files/Koalitionsabkommen_Master_FINAL.pdf

3
Wiener Wirtschafts- und Innovationsstrategie WIEN 2030 – www.wien.gv.at/english/business-media/vienna-2030.html

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





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There are five trends that will shape the future of urban logistics in Austria. They are:⁵

- Automated and autonomous driving (innovative means of transportation)
- The use of vehicles with alternative drive systems
- Moving local supply operations to times and routes outside/away from peak traffic [delivery of goods at night, use of existing (public) transport services (tram etc.)]
- Decentralised warehousing (micro-centres, logistics zones, micro handling systems)
- Freely accessible package collection rooms (consignment transfer systems)

“Sustainable urban logistics needs transparent environmental, economic and, above all, social sustainability.”

Florian Hofer,
Head of Delivery Services/Heavy Pedals

1.1 European examples

Companies, universities, start-ups and logistics service providers, as well as other operations such as public transport providers, often work together to create innovative concepts. There is a strong need for concrete solutions tailored to meet the specific conditions of a particular city. The aim is to reduce existing traffic congestion while enabling socially and ecologically compatible growth in urban delivery operations. A variety of different solutions is emerging: the spectrum of examples from other European cities ranges from vehicles powered with alternative fuels to night-time deliveries, city-wide hub networks to underground supply systems. This section lists just a few examples of the many diverse solutions developed throughout Europe; the section VIENNESE STRATEGIES: Concepts, initiatives and projects presents numerous ongoing and completed projects to illustrate the equally innovative project landscape in Vienna.

○ Berlin_Micro-Hubs

As part of the KoMoDo project, parcels are delivered once a day from the depots of CEP (courier express parcel) service providers on the outskirts of the city to micro-hubs in Berlin's

⁴ Citylogistics – www.citylogistics.info/food-for-thoughts/the-future-of-last-mile-delivery-10-most-important-trends/

⁵ Ping Wang (2019), Analyse von Best Practices im Bereich der urbanen Gütermobilität

“A well-functioning logistics system is the backbone of every city – in Vienna, we will work together to do all we can not only to increase transportation volumes, but also to reduce the burden on residents and the economy and to enhance the quality of life in the city by focussing on greater efficiency, sustainability and smart systems.”

Thomas Madreiter,
Director of Planning, City of Vienna

Urban logistics relates to all flows of goods that take place within an urban area. Global trends such as urbanisation, the rise in e-commerce and the resulting increase in the volume of packages handled, and complex customer requirements pose numerous challenges for both cities and logistics providers. Companies must adapt to the market and their customers' requirements. In addition to on-demand and in-time deliveries, these also include alternative delivery addresses, automated collection booths, customer-oriented, uncomplicated returns processes and much more. Deliveries are expected to be on time, in full, with no error and no contact.⁴ All these trends have a significant impact on the volume of traffic and, as a result, on the greenhouse gas emissions load in urban areas. There is therefore a need for strategies and solutions to make urban logistics more efficient, more sustainable and to lessen negative impacts on society.

city centre, which serve as interim storage facilities. They are then transported to the end customers on cargo bicycles and hand trucks. The small delivery radius around the hubs allows the conventional delivery vans to be replaced by zero-emission vehicles for the last mile. One distinctive feature of the KoMoDo project is that the micro-hub locations are shared by several CEP service providers and the hubs are designed to be used by several operators in collaboration.⁶

○ Frankfurt_Güterbim

The “Güterbim” (goods tram) is a recurring concept among logistics experts, researchers and the city administration. In cooperation with courier service provider Hermes, the Frankfurt University of Applied Sciences has piloted a three-stage parcel delivery process using a “Güterbim”: goods are delivered to the tram depot on the outskirts of the city by electric van, where they are picked up by a goods tram, which drops them off at pre-determined stations in the city centre. Electric cargo bikes are used for the last mile. When compared directly to the cost of a van delivering the parcel from a depot to your doorstep, the goods tram costs 28 cents more. But from an ecological point of view, this concept is definitely profitable as it can save 57 percent of CO₂ emissions.⁷

○ Hamburg_Smart City Loop

Following a successfully completed feasibility study, Smart City Loop is joining forces with the company Four Parx to take the next steps towards the actual implementation of an underground goods transport system in Hamburg. Some of the most important questions that had to be answered in the study were what kind of transport system to use, how to find suitable sites for the distribution centres, and how to assess economic viability and the impact on the environment, climate and traffic. Initial concerns about low profitability due to the enormous costs involved were refuted by the feasibility study for Hamburg. The project is still in the early stages of implementation, but it could well prove to be an interesting concept for other cities in Europe in the future.⁸

○ Härkingen-Niederbipp-Zürich_Cargo Sous Terrain

Another new underground logistics system is being developed in Switzerland: Cargo sous terrain. Urban centres will be connected to important production and logistics locations via a system of tunnels. They allow small goods to be transported from one place to another by the fastest possible route. The first section of the route between Zurich and Härkingen-Niederbipp is scheduled for completion as early as 2031. The power required to operate the tunnel system will also be generated from entirely renewable energy.⁹

○ Lyon_Müllentsorgung auf dem Wasser

Lyon city centre has only two waste disposal/recycling sites, which is why the River'tri project was initiated. River'tri is a recycling system operating on the Saone river, which runs through the city of Lyon. Every Saturday, Lyons residents are offered the opportunity to dispose of their bulky waste properly at a designated location in the city. Waste items such as wood, textiles, specific types of household waste, electronic items, metals, furniture, etc. are all accepted here, just like at a conventional waste collection point. In the evening, the collected waste is taken to the port of Lyon, where it undergoes the customary separation and recycling process. The project not only fosters greater awareness of the need to separate waste, but also provides easy access to a suitable collection point in the city centre, thus avoiding long and CO₂-intensive journeys to the outskirts of the city. In addition, River'tri demonstrates the potential of using rivers for urban and sustainable logistics.¹⁰

○ Stuttgart_Parkhaus als Verladestation

In many cities, finding suitable logistics space in urban areas is becoming extraordinarily difficult. For this reason, the Fraunhofer Institute for Industrial Engineering in Stuttgart is now testing the possibility of using multi-storey car parks as temporary logistics hubs. Early in the morning, when the multi-storey car parks are still empty, they will serve as a short-term interim storage facility for CEP service providers, offering a location from which items can be delivered to end customers by cargo bike. The car park operator Apcoa will provide the necessary parking spaces and the logistics company veloCARRIER will handle parcel deliveries.¹¹

⁶ Komodo – www.komodo.berlin (in German)

⁷ Pilotenversuch in Frankfurt – www.faz.net/aktuell/rhein-main/frankfurt/pilotversuch-in-frankfurt-das-paket-mit-der-strassenbahn-16810185.html (in German)

⁸ Smart City Loop – www.smartcityloop.de/wp-content/uploads/2020/09/PM-HH-18.9.20.pdf (in German)

⁹ Cargo Sous Terrain – www.cst.ch/en/what-is-cst

¹⁰ River'tri – www.initiativesrivers.org/vos-solutions/rivertri-a-waterborne-waste-collection-service-in-the-city/

¹¹ Stuttgarter Zeitung – www.stuttgarter-zeitung.de/inhalt.parkhaus-aus-verladestation-konzept-fuer-bessere-luft.95150ea5-fc48-4925-a5ed-4f85e9c597d4.html (in German)

1.2 Rethinking urban supply from a sustainability standpoint

The growth in parcel deliveries and thus the number of delivery vehicles in the city is probably the best-known example of the increasing awareness of urban logistics. In 2019, 95 million parcels were transported in Vienna – 9 per cent more than in 2018.¹² Even more pronounced increases are expected in 2020 and 2021 due to the COVID-19 pandemic. However, contrary to what many people imagine due to its heightened visibility, urban logistics is not limited to parcel deliveries. Deliveries of goods to retailers, construction sites, restaurants, trade firms, hospitals and care services, and many other sectors are all part of urban transport. Accordingly, not only courier, express and parcel services (CEP) are affected, but also general cargo deliveries and freight forwarders. Rising traffic volumes mean increasing emissions for residents and decreasing quality and punctuality for logistics service providers.

In an effort to curb climate change and ensure that cities remain liveable, more than 500 cities have already actively created a set of rules for delivery operations in the form of access restrictions, ranging from time-limited permits to green zones and general bans on driving.¹³

“Commercial traffic is the very foundation of a functioning city. If Vienna is to maintain its high quality of life, commercial traffic will also make an important contribution to transforming mobility into a future-oriented transport system that is aligned with climate protection goals.”

Angelika Winkler,
Municipal Department 18 of the City of Vienna

- Cities are reacting and creating framework conditions.

Cities are opportunities for change. The high concentration of processes that make up our daily life together offers optimal conditions for testing innovations and making the resulting changes rapidly visible and tangible. But they are also the first to generate new challenges that require new solutions. The focus is on improving transport capacity utilisation, bundling logistics in hubs, switching to small zero-emission vehicles, as well as developing new, local supply and disposal concepts. The aim is to increase efficiency and environmental friendliness on the “final mile” in the city. This will ease the burden on the urban transport infrastructure while at the same time improving the quality of service, environmental performance and the quality of life in general.

“The Digital Agenda Vienna was developed on the basis of the Smart City Vienna target triad – resource conservation, quality of life, innovation – in a participatory approach, where goals and fields of action were defined jointly with local residents in order to transform Vienna into a digitalisation hub and, in doing so, to shape urban logistics in Vienna sustainably.”

Klemens Himpele,
CIO, City of Vienna

- Everyone takes responsibility and cooperation is key.

The advancing digital revolution is also transforming logistics: artificial intelligence, IoT, big data and other technologies are optimising operating processes and entire supply chains. A purely technological solution will not be enough to implement the transition to sustainable urban logistics. What we need, therefore, is a mixture of new technologies, multifunctional infrastructures and an awareness of logistics among consumers, i.e. city residents. All stakeholders need to be involved in finding new solutions, as neither the cities, nor retailers, nor logistics service providers can create change on their own. Cooperation and integrative planning are the key words of the day. Logistics and security of supply will become part of urban development and will thus be incorporated into how properties and infrastructures are designed. Development areas for logistics must be preserved and existing infrastructures must be used for logistical purposes. This, combined with responsible consumers who are aware of how their own patterns of consumption affect logistics and thus the volume of delivery traffic in the city, can lead to the development of holistic solutions.

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Wirtschaftskammer Wien, Standort- und Infrastrukturpolitik: KEP Branchenreport 2020 Wien, www.logistik2030.at/wp-content/uploads/2021/03/20210310_B_KEP_Branchenreport_SIS-web.pdf

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Urban Access Regulations: Stadtzugangsverordnung in Europa, urbanaccessregulations.eu

“Integrating real-time data (road traffic conditions, inventory levels) into logistics optimisation procedures will help us achieve our environmental goals in the years to come. Data science meets optimisation – this will be an important factor in sustainable logistics in the future.”

Karl F. Dörner,
Universität Wien (University of Vienna),
Production and Operations Management
with International Focus

- The COVID-19 pandemic and urban logistics

The COVID-19 pandemic has had a marked effect on urban logistics. Multiple lockdowns, isolation and online shopping have a significant impact on the quantities of transported goods: Österreichische Post AG, for example, reports an increase of 30 per cent in the number of parcels delivered,¹⁴ DPD Austria an increase of more than 10 per cent. In addition, there have been substantial increases in food deliveries: for example, markta¹⁵, the digital Viennese farmers market, was able to increase its turnover from 90,000 to 2.3 million in 2020, and Spar Austria recorded 50 per cent more orders via online shop as compared to 2019.¹⁶

Logistics service providers also play a role in the City of Vienna’s COVID-19 testing strategy: the City of Vienna commissioned the company Veloce Liefert GmbH to collect samples using zero-emission means of transportation such as bicycles and electric mopeds.

In 2020, many Viennese companies also faced the challenge of having to quickly switch their sales to digital technology in order to be able to supply customers in the region while shops were closed. The City of Vienna’s Wien Online funding programme, which was managed by the Vienna Business Agency, provided small businesses with support in setting up and expanding their online shop systems – the 15 million euro budget was used to the full.

1.3 Vienna on the road to 2050: Goals and strategies

City logistics are explicitly mentioned in the coalition agreement signed by Vienna’s city government in December 2020. It describes the problems associated with increasing online trade and the need for innovative solution concepts in this regard. One of the ideas floated in this agreement is the creation of a micro-hub network within the city for low-emission parcel distribution. The administration stipulates that cargo bicycles and alternative forms of transport are to be promot-

ed by the city. It also proposes drawing up a logistics master plan to increase the efficiency of logistics in the metropolitan area, with binding targets to be achieved by 2022.¹⁷

Delivery traffic in Vienna has grown steadily in the past few years, not least due to the increasing volume of parcels. The latest forecasts indicate that this trend will continue and that the volume of parcels will continue to rise sharply in the coming years. In five years, the number of parcels transported in Vienna is expected to reach 150 million.¹⁸

The City of Vienna is consequently working together with businesses and researchers on the question of how the flow of goods in the city centre can be made more sustainable. The primary aim is to counteract the fragmentation of inner-city transport. The idea is to reduce emissions for deliveries over the “last mile” and make them more efficient, i.e. requiring as few delivery attempts as possible. The “last mile” is the distance from the supplier’s depot to the recipient’s doorstep. In many cases, this last mile accounts for 50 per cent of the delivery costs incurred throughout the entire transport process.

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OTS – 165 Millionen Pakete in 2020 – Post verzeichnet gewaltigen Mengenrekord www.ots.at/presseaussendung/OTS_20210104_OTS0057/165-millionen-pakete-in-2020-post-verzeichnet-gewaltigen-mengenrekord (in German)

15

Markta: Die großen Ziele der Theresa Imre – www.trendingtopics.at/markta-digitaler-onlinemarkt-erlebte-boom-im-corona-jahr (in German)

16

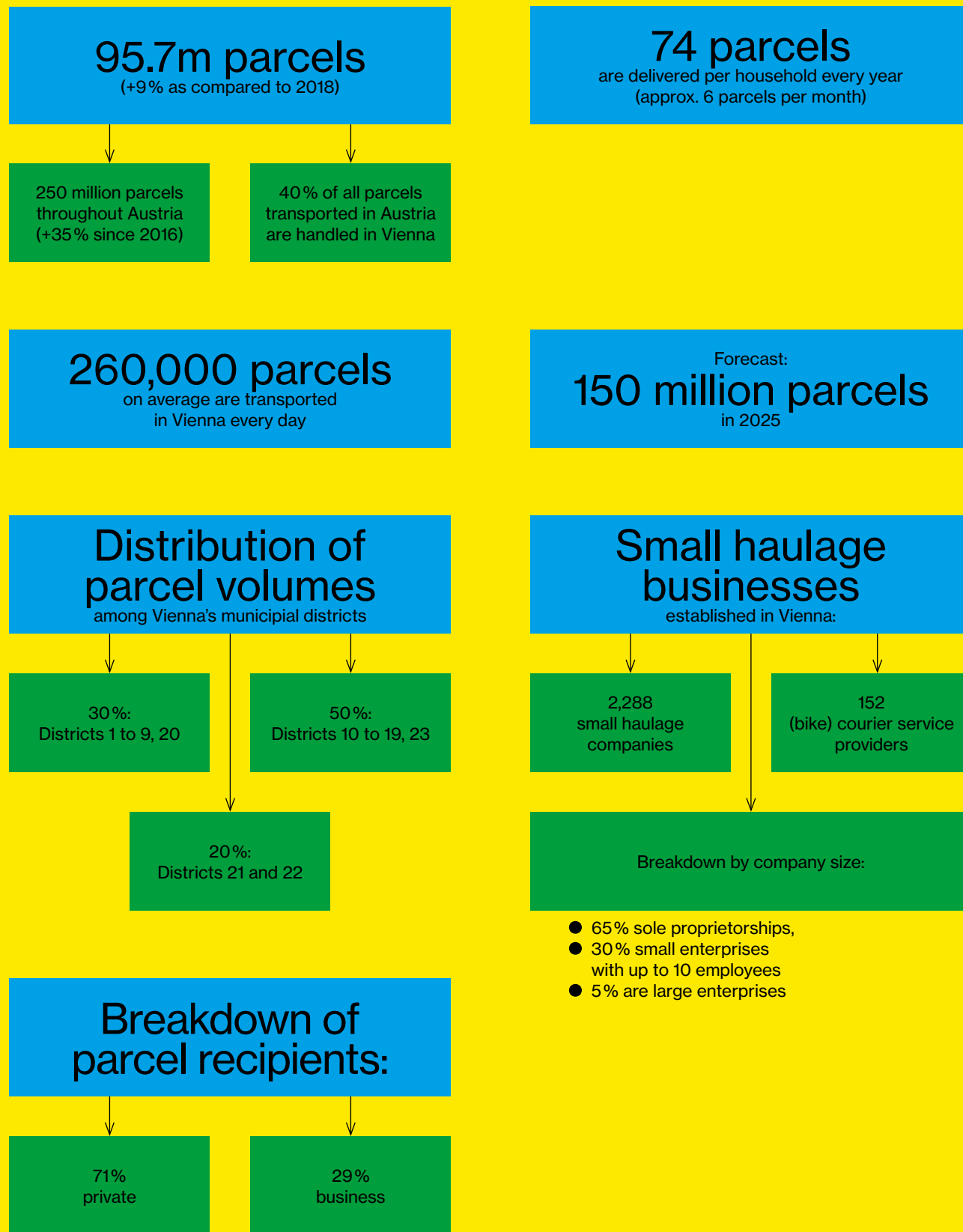
SPAR ist neuer Marktführer im heimischen Lebensmittelhandel – presse.spar.at/news-spar-ist-neuer-marktfuehrer-im-heimischen-lebensmittelhandel?id=127434&menueid=504&=deutsch (in German)

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Koalitionsabkommen SPÖ/Neos – www.wien.gv.at/regierungsabkommen2020/files/Koalitionsabkommen_Master_FINAL.pdf (in German)

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Wirtschaftskammer Wien, Standort- und Infrastrukturpolitik: KEP Branchenreport 2020 Wien – www.logistik2030.at/wp-content/uploads/2021/03/20210310_B_KEP_Branchenreport_SIS-web.pdf (in German)



KEP in Zahlen www.logistik2030.at/wp-content/uploads/2021/03/20210310_B_KEP-Branchenreport_SIS-web.pdf
and RTR GmbH (Post Monitor 2019: www.rtr.at/TKP/aktuelles/publikationen/publikationen/m/pm/post-monitor-jahresbericht-2019.de.html)

“It is crucial that we make the last mile more efficient and innovative – cargo bikes and delivery robots are the future.”

Jan Fabian Ehmke,
Universität Wien (University of Vienna),
Department for Business Decisions
and Analytics

“Purely technological innovations won't get us far – we need new cooperation models and a suitable legal framework if we are to achieve sustainable logistics.”

Roland Hackl,
Project Supervisor, tbw research GmbH

1.3.1 Concrete objectives

The city's strategy papers – both the Smart City Framework Strategy and the Strategy Vienna 2030 Economy and Innovation – also set out clear goals:

“Goods are transported into the city by suitable electric vehicles operating out of communal logistics centres on the outskirts. Inner-city distribution hubs and a dense network of collection points allow efficient, coordinated goods deliveries. New technologies allow growing numbers of everyday necessities to be produced locally again, with production increasingly based on closed cycles. As a result, the volume of goods traffic has declined significantly.”¹⁹

“Vienna safeguards top-class goods and passenger transport services that are climate-friendly and offer tight links with the surrounding region.”²⁰

- CO₂ emissions from the transport sector will fall by 50 per cent per capita by 2030 and by 100 per cent by 2050.

“Switching to new technologies such as electric drive systems will reduce the emissions of the remaining motor-driven vehicles. It is particularly important for commercial vehicle fleets (e.g. delivery services), taxis and ride-hailing services to be rapidly converted to electric drive systems. The City of Vienna is taking a pioneering role and is rapidly driving the conversion of its own vehicle fleets to zero-emission vehicles.”²¹

“Company vehicle fleets offer considerable potential for converting to e-mobility – and we need to utilise this potential.”

Tina Wakolbinger,
Wirtschaftsuniversität Wien
(Vienna University of Economics and Business)

- By 2030, commercial transport within the city area will be largely CO₂-free

“Given Vienna's thriving economy and the growing volume of traffic, especially in the retail sector, discussing the design of the transport system for commercial traffic in consultation with the companies concerned and the logistics sector is a central concern of the municipal administration. In particular, suitable measures are to be developed and implemented to expedite the conversion of commercial vehicle fleets to low-carbon propulsion systems, giving priority to crafts and trades, delivery services and the urban logistics sector. In parallel to this, the efficiency of commercial traffic is to be increased and eco-friendly transport and logistics systems developed, e.g. by avoiding empty trips and establishing coordinated logistics hub systems for shared use by a number of different suppliers.”²²

¹⁹ Smart City Wien Framework Strategy 2019-2050, p. 66; smartcity.wien.gv.at/der-wiener-weg/rahmenstrategie

²⁰ Strategy Vienna 2030 – Economy & Innovation p. 29; www.wien.gv.at/wirtschaft/standort/strategie.html

²¹ Smart City Wien Framework Strategy 2019-2050, p. 67

²² Smart City Wien Framework Strategy 2019-2050, p. 7

City Wien framework strategy is that commercial transport will be largely CO₂-free by 2030. Furthermore, the final energy consumption per capita in the transport sector will be reduced by 40 per cent by 2030 and by 70 per cent by 2050.

○ Schieneninfrastruktur-Dienstleistungsgesellschaft mbH

As a subsidiary of the BMK, SCHIG mbH carries out a variety of functions, in particular for the railway sector. It also handles funding programmes, including the BMK's logistics funding, which focuses on pilot and implementation projects for innovative logistics concepts.

○ Urban Innovation Vienna

is Vienna's Urban Think-tank for questions relating to the future of the city, with a focus on three key areas: smart city, energy, and future cities. The Smart City Vienna Initiative coordinates the Smart City Vienna framework strategy mentioned above on behalf of the City of Vienna.

○ Vienna Business Agency

The Vienna Business Agency supports local and international companies in all stages of their corporate development, offering advice on entrepreneurial issues and helping expats launch their business in Vienna. The Vienna Business Agency acts as an intermediary for contacts and partnerships with companies, research facilities, institutions, networks and initiatives, and as a hub between the city and companies and facilitates the implementation of many innovative projects.

2.2 Research and education

○ Austrian Institute of Technology (AIT)

Here, a number of research teams are working to address the challenges of urban logistics. The Transport Optimisation and Logistics research team develops new concepts, applications and methods in the fields of both passenger transport and goods transport. The primary focus is on exploring available innovative technologies. The Integrated Mobility Systems research team focuses on transport systems, transport planning and mobility concepts.

○ FH BFI Wien (University of Economics, Management and Finance, BFI Vienna)

The university offers a Bachelor's and Master's degree programme in "Logistics and Transport Management", with options for specialisation in Logistics and Supply Chain Management or Transport and Traffic. In addition, the FH BFI Wien is actively involved in various research projects in the field of logistics at a city, national and EU level.

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Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology – www.bmk.gv.at

○ FH Campus Wien (University of Applied Sciences Campus Vienna)

The "Green Mobility" master's degree programme at FH Campus Wien equips interested students with extensive knowledge about electromobility and the infrastructure it requires. Environmental protection is a theme that runs through the entire degree programme.

○ Fraunhofer Austria

collaborates on research projects at a national and international level. Researchers involved in the Green Logistics programme focus on making logistics more environmentally friendly throughout the entire value chain.

"Crowdsourcing delivery in the field of mobility of goods can generate valuable resource-efficient, ecological progress in the Vienna metropolitan region."

Sandra Stein,
Fraunhofer Austria Research GmbH

○ Technische Universität Wien (Vienna University of Technology)

Researchers at the Vienna University of Technology's Institute of Transportation focus on concept of transport systems, their effects, and how to optimise them. Freight mobility and city logistics are also a key focus at the Institute of Spatial Planning, especially in the Transportation System Planning research unit.

○ Universität für Bodenkultur Wien, BOKU (University of Natural Resources and Applied Life Sciences, Vienna)

Research at the Institute of Production Management and Logistics at the BOKU Wien focuses on different aspects of supply chain management, simulations and analyses of terminals, optimisation of humanitarian logistics, logistics planning, and supply chain optimisation. In the field of sustainable urban logistics, the research team addresses the optimisation and implementation of various logistics concepts in the city.

○ Universität Wien (University of Vienna)

The Department of Business Decisions and Analytics at the University of Vienna engages in high-quality research in the fields of quantitative economics and decision support systems. In their research activities, the department team is developing innovative approaches for green urban logistics, focusing on achieving the best possible combination of means of transportation, order bundling and the avoidance of empty runs.

○ Wirtschaftsuniversität Wien (Vienna University of Economics and Business Administration)

the Institute for Transport Economics and Logistics at WU Wien offers various specialisations in the field of logistics in its bachelor's degree programme and a separate master's

degree programme in Supply Chain Management. In the field of city logistics, the institute's research team has a particular focus on the city hub approach. Various projects are being conducted to explore the effects and potentials as well as the risks and requirements of city hubs for urban logistics.

○ Vienna Business School

In June 2019, the school administration of Vienna Business School Akademiestrasse and the Head of the Transport and Traffic Division of the Vienna Economic Chamber held a kick-off event to promote the topic of logistics at the school's site. They invited speakers to talk about their practical experience in the field. The numerous lectures got the students excited about the topic. This gave rise to an elective course on logistics, which started in September 2019 with 65 students. Field trips and lively discussions with practitioners in the field were met with great interest. As a result, the school's range of courses was expanded in September 2020 to include a focus on logistics management, which students can choose as part of their training in the advanced course. Key topics include mobility of the future, the Silk Road, intermodal transport and green logistics.

2.3 Relevant interest groups

○ Arbeiterkammer Wien, AK (Vienna Chamber of Labour), Department of Environment and Transport

For the AK, social sustainability and environmental sustainability go hand in hand. The AK stands for affordable, comprehensive, environmentally friendly transportation, provided under fair working conditions. Accordingly, it represents the interests of consumers and workers in all environmental policy projects at national and European level.

○ Fachgruppe Wien der Klein-Transporteure (Vienna Small Haulage Operators' Association)

Represents the interests of small haulage operators and (bicycle) messenger services. A new quality seal has been introduced to enhance the quality and image of the sector. The KT quality seal is awarded to reputable small haulage businesses with high quality standards.

○ Transportation and Traffic Division

This division of the Austrian Economic Chamber represents the interests of transport companies in Vienna, including passenger and freight transport services as well as logistics and infrastructure companies. The Vienna Small Haulage Operators' Association, which is particularly important for urban logistics, is based here.

○ Wirtschaftskammer Wien, WKW (Vienna Economic Chamber)

The WKW is intensely concerned with the steady growth of e-commerce and the resulting problems associated with the high demand for CEP. In collaboration with the consulting firm Econsult, it published the new 2020 CEP Industry Report in September 2020. The strong forecasts for the CEP sector in the coming years indicate the urgent need for the implementation of innovative city logistics concepts in Vienna.

“The steadily increasing digitalisation of our living and working environments, along with measures introduced to achieve our climate targets – especially in the field of drive technology – call for new business ideas and considerable investment on the part of entrepreneurs.”

Andreas Dillinger,
Head of Transport Policy,
Vienna Economic Chamber

○ Damen Logistik Club, DLC (Ladies' Logistics Club)

Since 2014, the DLC has been committed to strengthening the network of women in logistics and improving the framework conditions for cooperation in the industry. Its members include over 100 decision-makers from the transport and logistics sector, as well as the manufacturing and retail industries, ministries, chambers and associations.²⁶

○ Forum Green Logistics, FGL

Forum Green Logistics is a pioneering, sustainability-oriented knowledge and networking platform that focuses on the transport industry and logistics. In the long term, the forum aims to contribute to making freight mobility greener, more socially responsible and more efficient by raising awareness of the associated processes and technologies among all stakeholders and strengthening the industry's image.²⁷

○ Verein Netzwerk Logistik, VNL (Network Logistics Association)

The VNL engages with the full range of topics in the fields of logistics and supply chain management. The network covers the manufacturing, retail, service and development sectors. It fosters dialogue on a wide range of topics between members and experts. Key focus areas include: procurement, supply chain management, intralogistics, transport and digitalisation.²⁸

2.4 Associations, societies and intermediaries

○ Bundesvereinigung Logistik Österreich, BVL (Austrian Federal Logistics Association Austria)

The BVL is a volunteer organisation that supports logistics professionals in the continued development of logistics. As an independent intermediary, it offers opportunities for an exchange between practitioners, researchers and educators, enabling them to work together on new logistics concepts and innovations. The association can provide expert assistance in the following areas in particular: issues relating to logistics applications and development, questions relating to future-oriented logistics and information on relevant trends, training, and development in logistics.²⁴

○ Council für Nachhaltige Logistik, CNL (Council for Sustainable Logistics)

The CNL is an initiative supported by the Institutes of Production Management and Logistics and Transport at the University of Natural Resources and Applied Life Sciences. Specifically, it is an association of fifteen European companies from the retail, logistics services and production sectors. They all share a common goal: the advancement of sustainable logistics. Key areas of focus include electronic utility vehicles, sustainable urban logistics, and sustainable warehouse logistics. The project is funded as part of the Electric Mobility Flagship Projects programme of the Austrian government's Climate and Energy Fund.²⁵

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Bundesvereinigung Logistik – www.bvl.at (in German)

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Council für nachhaltige Logistik – www.councilnachhaltigelogistik.at (in German)

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Damen Logistik Club – www.damenlogistikclub.com (in German)

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Forum Green Logistics – www.forumlogistics.at (in German)

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Verein Netzwerk Logistik – www.vnl.at (in German)



2.5 Funding programmes

○ Logistikförderung (Logistics funding) 2019-2023

The funding programme was initiated by the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology to promote the implementation of innovative logistics concepts, on the basis of both feasibility studies and concrete pilot and implementation projects. The goal is to promote ecological sustainability in the logistics sector. SCHIG mbH is the processing agency for logistics funding.²⁹

○ Future Mobility

Several projects in city logistics have been implemented as part of the Austrian Future Mobility programme and including the topics optimising the last mile, resolving land use conflicts, bundling transports and avoiding dispensable freight transports. The programme is funded by the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology and managed by the Austrian Research Promotion Fund (Forschungsförderungsfonds der gewerblichen Wirtschaft, FFG).³⁰

○ Zero Emission Mobility

The Austrian government's Climate and Energy Fund launched this programme to support the development of new zero-emission technologies. It funds research projects that are interested in implementing innovative and efficient electromobility solutions.³¹

○ E-mobility drive for businesses

The BMK is working with car importers to promote the purchase of e-vehicles and charging stations. The funding is managed by Kommunalkredit Public Consulting. It is also available to businesses to help them purchase e-vehicles and convert their fleets to alternative drive systems.³²

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BMK – www.bmk.gv.at/themen/mobilitaet/transport/queterverkehrlogistik/foerderung.html (in German)

30

Mobilität der Zukunft – mobilitaetderzukunft.at/de/strategie/fti-strategie-mobilitaet.php (in German)

31

Klima- und Energiefonds – www.klimafonds.gv.at/call/zero-emission-mobility-2020/ (in German)

32

KPC – Förderung E-Mobilität für Betriebe – www.umweltfoerderung.at/betriebe/foerderungsaktion-e-mobilitaet-fuer-betriebe-2021.html (in German)



Development GmbH, Seestadt aspern Neighbourhood Management team, studio Jauschneq, upstream – next level mobility. Project duration: 2017 – ongoing.³³

○ GÜMORE – Güterverkehrsmodell Ostregion (Goods Transport Model Eastern Region)

Within the framework of the GÜMORE project, experts from the fields of transport planning and modelling, logistics, road maintenance and public administration are working together to create a comprehensive road and rail goods transport model. Reliable and resilient models are already in place for passenger transport, but not for goods transport. The model is intended for the public sector and logistics professionals. Participants: Technical University of Munich, University of Natural Resources and Applied Life Sciences Vienna, HERRY Consult GmbH, Graz University of Technology, ECONSULT Betriebsberatungsges.m.b.H. Project duration: June 2018 – May 2021.³⁴

○ Nachhaltige Logistik 2030+ Niederösterreich-Wien (Sustainable Logistics 2030+ Lower Austria-Vienna)

Logistik 2030+, a cooperation project between Lower Austria and Vienna, was launched in 2017. The project addressed demographic, economic and ecological changes in the urban region of Lower Austria-Vienna and the resulting challenges for logistics. The goal was to create a comprehensive action plan, which has since entered the implementation phase. The focus was on cutting CO₂ emissions, reducing congestion and implementing innovative logistics concepts. Participants: Province of Lower Austria, City of Vienna, Lower Austria Economic Chamber, Vienna Economic Chamber, denkstatt, ECONSULT Betriebsberatungsges.m.b.H. Project duration: 2017–2019.³⁵

3.1 Flagship projects

“Sustainable urban logistics not only requires suitable technical infrastructure, but also innovative methods so that new processes can be comprehensively evaluated and improved in terms of their economic, ecological and social effects.”

Patrick Hirsch,
Universität für Bodenkultur Wien
(University of Natural Resources
and Applied Life Sciences, Vienna)

○ aspern.mobil LAB

Six mobility labs in Austria were funded as part of the Future Mobility programme. The goal is to establish and expand supporting structures and innovation ecosystems for mobility and transport related RTI. Two of the six mobility labs – the aspern.mobil LAB and thinkport VIENNA – are located in the City of Vienna. The aspern.mobil LAB is a neighbourhood mobility lab with a clear spatial connection to aspern Seestadt. New urban mobility is explored with local residents in the real lab on site. Rather than just collecting different ideas, the aim is to develop and test mobility solutions quickly and efficiently in a real environment by involving all stakeholders at an early stage. The aspern.mobil LAB is funded by the BMK (Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology) through the research funding programme Mobilität der Zukunft (Future Mobility). Participants: TU Wien (Technical University of Vienna) (MDUR, MOVE), Wien 3420 Aspern

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aspern.mobil LAB – www.mobillab.wien

34

GÜMORE – projekte.ffg.at/projekt/3028204

35

Nachhaltige Logistik 2030+ – www.logistik2030.at/?page_id=276

“The project “Nachhaltige Logistik 2030+ Niederösterreich-Wien” has brought together the strengths of business and government to implement numerous measures designed to achieve modern, zero-carbon city logistics. Until now, activities have focused on the last mile, but from 2021 onwards, we will also address topics such as fleet conversion and sustainable logistics concepts.”

Andrea Faast,
Head of Location and Infrastructure Policy,
Vienna Economic Chamber

“As a trimodal goods hub, Hafen Wien plays an important role sustainable urban logistics. Motivated by continuing urbanisation and changing consumer patterns, we partnered with BOKU in 2017 to launch thinkport VIENNA as a think tank and mobility lab with the aim of advancing the development of resource and environmentally friendly urban logistics.”

Doris Pulker-Rohrhofer,
Technical Managing Director, Hafen Wien
& Manfred Gronalt,
Head of the Institute for Production
Management and Logistics,
Universität für Bodenkultur Wien

○ Screening for logistics sites Lower Austria-Vienna

The aim of this project was to identify business sites and secure them for use in logistics. Most of the greater Vienna area and Lower Austria were screened for high-potential sites, and appropriate measures were developed to secure them. Participants: City of Vienna (Municipal Department 18), Province of Lower Austria, Lower Austria Economic Chamber, Vienna Economic Chamber, Büro Dr. Paula. Project duration: 2018 – 2019.³⁶

○ thinkport VIENNA – smart urban logistics lab
thinkport VIENNA is a mobility lab that comprehensively addresses the challenges of logistics in urban conurbations, in the specific case of Vienna, on a long-term basis. thinkport VIENNA's mission is to be a catalyst, incubator and multiplier for new technologies, ideas and concepts to support innovations in freight logistics. Key leitmotifs of the mobility lab include zero emissions, effectiveness, efficiency and reclaiming public spaces. thinkport VIENNA provides support in generating and implementing innovations, as well as in presenting them and making them accessible to a wider audience. Participants: Universität für Bodenkultur (University of Natural Resources and Applied Life Sciences), Hafen Wien (Port of Vienna). thinkport VIENNA is funded by the BMK as part of the research funding programme Mobilität der Zukunft. Project duration: 2018 – ongoing.³⁷

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Projekt Screening von Logistikflächen Niederösterreich Wien – www.gpl.at/de/menu26/projekte250

37

thinkport VIENNA – www.thinkportvienna.at/?lang=en

3.2 Consolidation and cooperation

○ BioHub4All

The project focused on optimising the delivery of organic products from the region. Existing agricultural storage sites were made available to a number of organic food suppliers for a fee, allowing them to consolidate their food deliveries. This meant that they could share transport costs and save CO₂ emissions by pooling transport to the destination region. The project output included, among other things, the development of a software demonstrator that makes decision-making processes and findings available to a wider audience and demonstrates the potential of optimising food logistics. Participants: Gerhard Zoubek Vertriebs KG, Bio AUSTRIA. Project duration: April 2017 – March 2019.³⁸

○ Central LogPOINT

Central LogPOINT is an inner-city hub that is available for both B2B and B2C shipments. Zero-emission vehicles were used to distribute the deliveries. Participants: LogPOINT Logistics Services GmbH, CEP services e.g. FLUX, Heavy Pedals, e-fulfilment customers, including Schlumberger, Die Doppeladlermanufaktur, Vienna Economic Chamber. Project duration: August 2018 – December 2019.³⁹

○ City Hub Aspern Seestadt

A city hub operated by DPD was set up in Aspern Seestadt in 2016. The consolidated parcels are delivered to the city hub by electric minivan, and from there they are delivered to Seestadt residents by cargo bike. Now, having been in operation for four years, the hub has been successfully integrated into the Seestadt parcel delivery system. 35,000 parcels have already been delivered, saving around 19.5 tonnes of CO₂ emissions. DPD also operates other city hubs in Linz and Salzburg. Participants: EMILIA project, DPD. Project duration: October 2016 – ongoing.⁴⁰

○ City Hub Wien – Durchführbarkeitsstudie

In the course of a three-month feasibility study, Österreichische Post AG tested an alternative parcel delivery service in Vienna's city centre. The parcels were loaded into prefabricated delivery boxes and delivered by lorry to the city hub, which served as a temporary storage and distribution centre. Zero-emission vehicles were then used for the last mile of the delivery. The Rytte MovR model was used for this purpose.⁴¹ The Post AG opted for electromobility for regular parcel deliveries. Some 250 e-vehicles are already in use in Vienna, and the fleet is to be substantially expanded. Participants: Post AG, Rytte, FH Oberösterreich (University of Applied Sciences Upper Austria) – Campus Steyr. Project duration: July 2019 – September 2019.⁴²

○ HUBERT city logistics

A city hub was set up at the Port of Vienna to reduce the number of goods transport journeys. Consignments are handled here for all parcel services, and are consolidated before being delivered to the recipients. HUBERT was set up as an innovation project by an interdisciplinary team drawn from several municipal companies and operates as its own separate company with the aim of demonstrating how a neutral parcel hub can be run. Participants: Hafen Wien GmbH, Vienna Business Agency, Wiener Lokalbahnen Verkehrsdienste GmbH and Venz Logistik GmbH as cooperation partners. Project duration: June 2018 – ongoing operation.⁴³

○ KoopHubs – conception of a two-tier distribution system

The project aims to develop a sustainable, cooperative, two-tier distribution system for small consignments in the City of Vienna. A network of micro and neighbourhood hubs will be created to cope with the steadily increasing parcel volumes within the city. In contrast to many other pilot projects, this will involve setting up a larger number of hubs and integrating them into the city as neighbourhood hubs by providing additional social features. Participants: Wirtschaftsuniversität Wien (Vienna University of Economics and Business) – Institute for Transport Economics and Logistics, WU Wien – Research Institute for Supply Chain Management, Österreichische Post AG, greda IT-Solutions e.U., Forschungsgesellschaft Mobilität – Austrian Mobility Research FGM-AMOR Gemeinnützige GmbH, TPA European & Technology Consultants GmbH, Goodville Mobility OG. Project duration: August 2018 – July 2021.⁴⁴

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BioHub4All – projekte.fgg.at/projekt/1828278

39

Central Logpoint – www.logpoint.at (in German)

40

DPD Austria – www.dpd.com/at/de/2019/10/01/city-hub-aspern-feiert-geburtstag (in German)

41

BMK Grüne Stadtlogistik – infothek.bmk.gv.at/gruene-stadtlogistik-post-testet-city-hubs-in-wien (in German)

42

ORF – wien.orf.at/v2/news/stories/2898042 (in German)

43

HUBERT Stadtlogistik – hubert.stadtlogistik.at (in German)

44

Projekt KoopHubs – www.ait.ac.at/en/research-topics/transport-optimization-logistics/projects/koop hubs

○ LOGSTEP – Logistics Solution for Technical Personnel

This project involves testing a new delivery concept for field technicians designed to reduce the use of service vehicles. The goal is to make deliveries to technicians more economically, ecologically and socially sustainable. Key elements of the project include centralising deliveries via an inner-city hub, the use of zero-emission vehicles and consolidating materials deliveries. Participants: KONE AG, ECONSULT Betriebsberatungs-ges.m.b.H. Project duration: November 2020 – April 2022.⁴⁵

○ MiHu – Mid-sized freight centres

The research team behind the MiHu project addressed site selection strategies and analysed opportunities for cooperation in the operation of mid-sized inner-city freight centres, as well as the effects of the system and the anticipated changes in traffic volumes. The aim was to gather empirical findings and recommendations for the establishment of future midi hubs. A midi-hub is an inner-city consolidation centre which can supply a larger district on the last mile as compared to a micro-hub. The hub can and should be used by more than one CEP service provider. Participants; City of Vienna (MA 18), FGM – Forschungsgesellschaft Mobilität gGmbH, University of Natural Resources and Applied Life Sciences, Institute of Production Management and Logistics, Vienna University of Economics and Business – Research Institute for Supply Chain Management, LNC – Logistik Network Consultants GmbH. Project duration: September 2018 – August 2020.⁴⁶

○ RemiHub

The RemiHub project relies on temporary shared use of public transport spaces to shorten the last mile. The project uses spaces belonging to Wiener Linien (Viennese Lines, the main public transit company) as temporary hubs because their garages and workshops, for example, are very well connected to the transit network and also usually located in the city centre. These spaces offer attractive opportunities for handling goods in the city, as some of them are only used to capacity at certain times of day. Participants: tbw research GesmbH, TU Wien (Technical University of Vienna) Institute of Spatial Planning, Research Unit for Transportation System Planning, Wiener Linien GmbH & Co KG, Heavy Pedals OG. Project duration: September 2018 – August 2021.⁴⁷

3.3 Planning and platforms

○ Delivery on Demand

The Delivery on Demand project separated B2B orders from B2C orders in order to achieve benefits for both groups of recipients. Corporate customers received their deliveries in the morning and private customers in the afternoon or evening. These “second-wave deliveries” enabled parcel service providers to offer a recipient-oriented delivery service as well as

a range of delivery options and optional services, to be freely selected by the recipient. Participants: Consistix GmbH, University of Linz, HERRY Consult GmbH. Project duration: April 2017 – March 2019.⁴⁸

○ markta

Markta.at is Austria's first digital farmers market and a regional alternative to supermarkets and global retailers. Starting in 2017, produce from Austrian farmers is delivered to markta's logistics centre and consolidated for delivery, either directly to the end customer or to a pick-up station.⁴⁹ A mobile pick-up point was also developed for the digital farmers market in the form of a cargo bike. Customers' orders are batched and delivered to the centrally located pick-up point by a Maderna Cycle Systems' Tractor cargo bike, where they are held for collection for 24 hours. Maderna Cycle Systems was brought in to develop the mobile pick-up point with a view to transporting 250kg of food across the city. There are now two stationary pick-up points in Vienna. Participants: markta GmbH. Project duration: since March 2018 (ongoing).⁵⁰

○ Rosy's

The online platform Rosy's allows customers to order high-quality regional food straight from the farm and pick it up 24/7 via QR code from one of the two pick-up stations in Vienna. Participants: Rosy's GmbH. Project duration: since 2019 (ongoing).⁵¹

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Projekt LOGSTEP – www.logistik2030.at/?page_id=268 (in German)

46

Projekt MiHu – www.midi-hub.at/willkommen-bei-mihu (in German)

47

Projekt RemiHub – tbwresearch.org/projekt/remihub (in German)

48

Projekt Delivery on Demand – projekte.ffg.at/projekt/1828250

49

Markta – markta.at (in German)

50

Oekonews – www.oekonews.at/?mdoc_id=1123302 (in German)

51

Rosys – www.rosys.at (in German)

3.4 Collection points and lockers

○ Evaluation of parcel lockers in Vienna and Lower Austria

From October 2018 to March 2020, various locker systems from different manufacturers and operators were evaluated. Differences between operator-independent and single-provider systems were highlighted and conclusions subsequently drawn for long-term implementations. The lockers all have a common goal: to increase the first delivery rate and consolidate deliveries. Participants: Province of Lower Austria, City of Vienna, Vienna Economic Chamber, Lower Austrian Economic Chamber, operator groups. Project duration: October 2018 – March 2020.⁵⁵

○ A1

The company A1 operates open locker systems at 19 locations in Vienna. The parcel lockers are located at the company's own sites, at ÖBB sites and at public locations in the city. The system is available for all parcel services.

○ Amazon Hub

Amazon has a total of 29 parcel lockers in Vienna for the company's drivers to drop off their deliveries. Most of Amazon's locker systems are located at petrol stations.

○ Myflexbox

Myflexbox are open locker systems operated by DPD; four of them are located in Vienna. The lockers can be used to collect and drop off DPD orders. The locations are operated in cooperation with other companies. The system is available for all parcel services.

○ myRENZbox

Some of the locker systems supplied by Erwin Renz Metallwarenfabrik GmbH & Co KG are open to all operators. A total of 58 boxes are located in Vienna. In addition to delivery lockers for letters and parcels of various sizes, the myRENZbox also has a Fresh & Frozen refrigerated locker for perishables and a compartment for dry cleaning. Most of the lockers are located in residential complexes. The system is available for all parcel services.

○ SCHNURRR

This project addressed dormant freight transport. The aim was to develop a system that allows goods waiting for transport from a loading zone to be recorded on a point-by-point and temporary basis. All this data could thus be retrieved online at the touch of a button. The goal of the project was to support coordination of goods between loading zones and to improve the forecasting reliability of parking space information systems. Participants: PRISMA solutions (lead partner), Vienna Economic Chamber, City of Vienna, EBE Solutions, Parkbob, thinkport VIENNA. Project duration: April 2018 – September 2019.⁵²

○ Think!First

The aim of this project was to encourage online retail platform users to be more aware of their shopping habits. The idea was to minimise the number of returns, to order all items at one time instead of placing multiple orders, and thus to reduce the total number of deliveries. A modular online ordering system that could be integrated into existing online shops was developed for this purpose. This system used a gamification framework to reward users for preferred behaviour and used machine learning to automatically correct errors on a website (e.g. incorrect size information). Participants: Attribui GmbH, Grüne Erde GmbH, yverkehrsplanung GmbH, Dr Alexander Karl Seewald. Project duration: March 2017 – May 2019.⁵³

○ Wastebox.biz – Reducing construction site traffic

This pilot project aimed at reducing waste disposal traffic from large construction sites in Vienna and Lower Austria. A platform and a smartphone app were set up to coordinate different service providers with each other: when a need was reported, the app assigned the nearest service provider to the construction site. This helped prevent unnecessarily long waste disposal journeys. Participants: pink Robin GmbH, Vienna Economic Chamber, Lower Austria Economic Chamber. Project duration: June 2018 – September 2019.⁵⁴

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SCHNURRR – www.logistik2030.at/?page_id=268 (in German)

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Think!First – projekte.ffg.at/projekt/1828248

54

Wastebox.biz – www.wastebox.biz

55

Logistik 2030+Pilotprojekt Evaluierung von großteils betreiberunabhängigen Paketboxensysteme in NÖ und Wien – www.logistik2030.at/wp-content/uploads/2020/11/broschuere_-betreiberunabhaengige-paketboxensysteme-noe-wien.pdf (in German)

○ PBS parcelbox solutions

Parcel lockers have already been installed at 34 different locations in Vienna. The wireless parcel lockers are generally located in the entrance areas of residential buildings next to the letterboxes. The system is available for all parcel services.

○ Post Office

Österreichische Post AG operates its locker system expressly for postal customers. The Post has 128 parcel lockers in Vienna, the majority of which are located in post office branches. Lockers have also been installed in retail spaces and at petrol stations.

○ Regibox

Regibox operates an open locker system. It is located in a residential complex in Vienna. The system is available for all parcel services.

○ Variocube

Variocube operates 17 locker systems in Vienna, but not all of them are open. The lockers are located at the premises of various service providers, including dry cleaners and in the tourism industry. Five locker systems have been installed in residential complexes in Vienna. The system is available for all parcel services.

○ WienBox

A project initiated by the Wiener Stadtwerke Group. The group plays a neutral role in the market (not a CEP service provider or box producer), and has extensive expertise in partner networking for large-scale projects and experience in the field of logistics, digitalisation and communications with institutions of the City of Vienna. The plan is to set up transshipment locker systems at attractive locations in Vienna over the course of two pilot phases. These systems will be neutral, i.e. available to all providers. Furthermore, the systems are to be digitally connected to the neutral platform solutions provided by the Wiener Stadtwerke Group. Legal and technical framework conditions for parcel logistics in Vienna are to be developed on this basis. The first purpose-built WienBox was launched in July 2021 in the 7th district at Stiftgasse 5–9, but in fact 200 parcel pick-up points with over 7,000 compartments are already available in the system thanks to the project's diverse partner structure. Participants: Wiener Stadtwerke, Wiener Lokalbahnen, Wiener Lokalbahnen Cargo, Wiener Lokalbahnen Verkehrsdienste, Telekom Austria (A1), FH BFI Wien, Gregori Consulting | Strategy, City of Vienna – Municipal Department 18, Vienna Economic Chamber, Upstream Mobility, Wiener Linien, Wien Energie, Wiener Netze, WIPARK Garagen, Bestattung & Friedhöfe Wien, GWSG – Gemeinnützige Wohnungs- und Siedlungsgesellschaft der Wiener Stadtwerke, Vienna Business Agency, thinkport VIENNA, and many more. Project duration: 2020–2023.⁵⁶

“Taking an active part in addressing and shaping the issue of sustainability is the order of the day. I am very pleased to report that the City of Vienna has already accomplished a great deal in the field of “Sustainable Urban Logistics” and is planning the next steps, and that we, as the FH BFI Wien, can contribute to this.”

Andreas Breinbauer,
Rector and Head of the degree programme
“Logistics and Transport Management” at the
FH BFI Wien (University of Applied Sciences
BFI Vienna)

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WienBox: wienbox.at

3.5 Transportation and vehicles

“We need efficient solutions to meet the growing logistical challenges in our cities. Small electric vehicles (such as electric cargo scooters), which take up little space and are therefore the ideal delivery vehicles in traffic-congested areas, are the perfect solution here.”

Herbert Bisovsky & Johannes Horvath,
inventors

○ e[Pack] – der rein elektrische Lastenroller

The Flyingcarpet is an electrically powered cargo scooter used for the last mile of delivery. The most striking feature of this vehicle is that it is operated from a standing position. The idea behind this: The elevated position gives the driver a better view of the traffic and especially pedestrians, thus contributing to better road safety. In addition, the standing position makes it easier for riders to get on and off more quickly. The cargo scooter is ideal for the last mile of deliveries, tradespeople, private customers, sharing services and as a neighbourhood vehicle.⁵⁷

○ GLEAM

The Cargo eBike developed by the Viennese company Gleam opens up new forms of mobility. Experts from the motorcycle industry were consulted during the development process. The result is an extremely strong and resilient cargo bike with dynamic tilting technology (DTT) that compensates for all bumps and irregularities in the road. This ensures that the load is transported safely while the driver experiences a pleasant, time- and cost-efficient journey through the city or countryside. The Cargo eBike can be customised to suit a wide range of customer requirements. GLEAM's cargo bikes are developed and manufactured in Europe, with production facilities in Italy and the Netherlands.⁵⁸

○ Maderna Truck

The Maderna Truck by Maderna Cycle Systems was originally produced for a project in Africa and then adapted in collaboration with Heavy Pedals to create a cargo bike suitable for everyday use. It is designed in particular to accommodate large and heavy loads of up to 120kg. Great care was taken during the manufacturing process to use resources as sparingly as possible.⁵⁹

○ MEGAWATT-Logistics

The Megawatt Logistics project is exploring sustainable solutions for the conversion and operation of emission-neutral logistics fleets in a three-year field trial. Tests with 26t electric vehicles in five different use cases form the basis for validating the previously developed models and planning tools. In addition to reducing greenhouse gas emissions, the project's overarching goals include the creation of an e-logistics database, the development of new business models and planning tools, and the preparation of a guide for converting fleets to electric lorries. The project is led by the Council for Sustainable Logistics, based at the University of Natural Resources and Applied Life Sciences Vienna, and involves a wide range of partners. Participants: University of Natural Resources and Applied Life Sciences Vienna, LSG Building Solutions GmbH, Stiegl Getränke & Service GmbH & Co KG, VERBUND Energy4Business GmbH, Quehenberger Logistics GmbH, REWE International Lager- und Transportgesellschaft m.b.H., SMATRICS GmbH & Co KG, i-LOG Integrated Logistics GmbH, Netz Niederösterreich GmbH, Österreichische Post AG, Schachinger Immobilien und Dienstleistungs GmbH & Co OG, Kairos – Institute for Impact Research and Development, SPAR Österreichische Warenhandels AG, EVN AG, MAGNA STEYR Fahrzeugtechnik AG & Co KG. Project duration: March 2018 – February 2022.⁶⁰

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Flying Carpet – mailchi.mp/5b30c9ea3807/flyingcarpet (in German)

58

GLEAM – gleam-bikes.com/ebike/

59

Maderna Truck – mcsbike.com/truck (in German)

60

Projekt Megawatt Logistics – www.klimafonds.gv.at/unsere-themen/mobilitaetswende/leuchttuerme-der-elektromobilitaet/megawatt-logistics (in German)

The objective of the Vienna Business Agency is the continuous development of international competitiveness by supporting 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.

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.

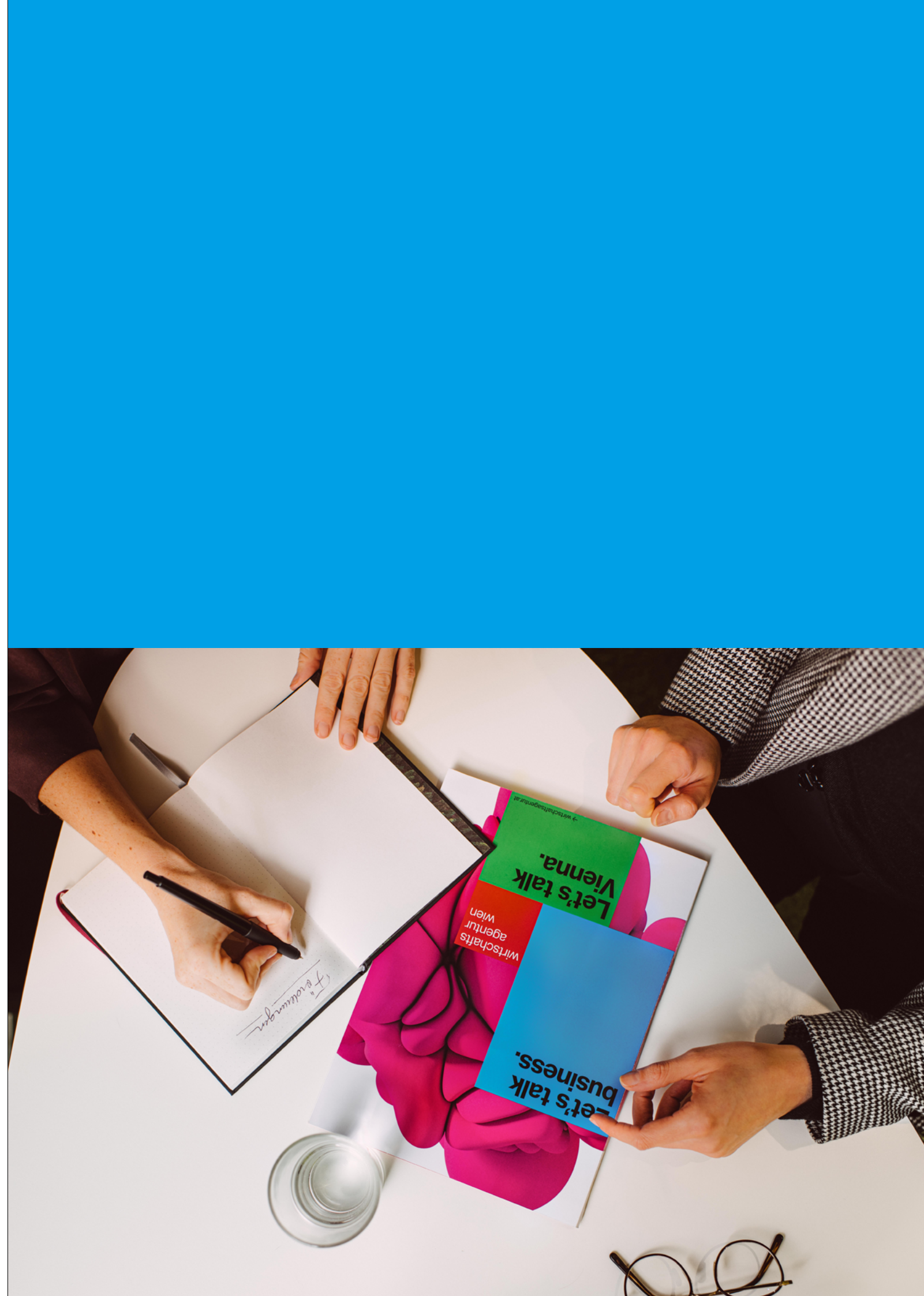
The Vienna Business Agency sees itself as a network of the Viennese Green Tech & Social Tech industry and supports businesses with consultations, as well with distribution and networking among themselves. Events and workshops on topics from the sustainability sector are held regularly.

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 Labs⁶¹ 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: viennabusinessagency.at/funding/programs

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





In the alphabetical list⁶² on the following pages, we offer you an overview of selected companies from Vienna that offer services in the field of sustainable logistics.

Companies in the field of sustainable urban logistics

COMPANY	DESCRIPTION	WEBSITE
BEEANCO	The company beeanco has launched Super Willi, a CO ₂ -neutral last mile delivery solution for businesses and customers. Products from shops in Vienna are delivered to customers within 30-60 minutes. Not only can shops book Super Willi to have their products delivered, customers can also arrange for Super Willi to deliver any goods from a shop to their home.	superwilli.at
BYRD	byrd invites companies to connect their online shop to the byrd system. All related tasks are then performed by byrd, which has an international logistics network that allows it to process orders smoothly. It takes care of storage, shipping, returns and many other factors.	getbyrd.com
SCHENKER & CO AG	Schenker & CO AG is the Vienna branch of DB Schenker, an internationally active logistics service provider. In March 2021, Schenker received two fully electric lorries that now will be used to transport goods in Vienna; more e-lorries are to be used in Linz, Salzburg and Innsbruck.	www.dbschenker.com/at-de/ueber-uns/db-schenker-in-oesterreich/geschaeftsstellen-in-oesterreich/wien
DENKSTATT	Denkstatt is a consulting firm providing support for environmental and sustainability related issues. It aims at developing long-term strategies that are also economically viable. The company also provides consulting services in the transport and logistics sector and works on projects that seek to use new concepts to improve urban logistics.	denkstatt.eu/?lang=de
ECONSULT	The logistics consulting and planning company Econsult offers services in various areas in the logistics sector. It is also involved in the development of many projects in urban logistics, including the development of the overall Smart Urban Logistics concept initiated by the Austrian Climate and Energy Fund.	www.econsult.at/de

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This list does not claim to be complete.

COMPANY	DESCRIPTION	WEBSITE
GLEAM	The company GLEAM produces cargo bikes for urban mobility. They have a particular focus on sustainability and the bicycles are manufactured in Europe. The company's goal is to contribute to the reduction of CO ₂ emissions with their cargo bicycles.	gleam-bikes.com/de
GOODVILLE	The Goodville company specialises in bicycles. Their goal is to get businesses up and cycling. They run various cycling projects for medium-sized and large companies. Their range of services extends from last-mile deliveries and branded bikes as advertising media to a mobile bicycle repair shop in Vienna. The company also engages in consulting and research.	www.goodville.at
HAFEN WIEN (PORT OF VIENNA)	As a subsidiary of Wien Holding, Hafen Wien is a company owned by the City of Vienna. Covering a total area of three million square metres, it functions as a trimodal logistics hub with its three ports, Freudenu, Albern and the Lobau oil port, all linked to road, rail and water infrastructure. Hafen Wien is an important employer with around 100 companies and up to 5,000 jobs located at the site. Situated on the three Ten-T (Trans-European Network) corridors, it is one of the most important hinterland hubs in Europe, especially for the major North Sea and Adriatic ports.	www.hafen-wien.com
HEAVY PEDALS	Heavy Pedals is a messenger service that delivers parcels by cargo bike all year round throughout the entire Vienna area. Deliveries are carried out only by cargo bike, which means that this logistics company does not pollute the city with direct emissions. The company relies on 100 per cent natural power to run the office, warehouse, and electrically powered cargo bikes, which further underlines its commitment to conserving resources.	heavypedals.at
HERMES RADBOTINNEN	Hermes RadbotInnen is a bicycle courier service in Vienna. It uses only bicycles and cargo bikes to deliver parcels across Vienna. The Hermes delivery riders cover over 100,000km per year. This translates to a savings of 20,000kg of CO ₂ emissions, thanks to their zero-emission deliveries by bike. One of the special features of this courier service is that it is organised on the basis of grassroots democracy. It is run by all the riders as a collective, and important decisions are made and implemented with everyone's involvement.	hermes.at

COMPANY	DESCRIPTION	WEBSITE
HERRY CONSULT	Herry Consult is an independent consultancy firm specialising in transport, including logistics. The company has a strong focus on the ecologically and economically sustainable optimisation of goods transport.	www.herry.at
H2 PROJEKT. BERATUNG KG	h2 projekt.beratung KG was founded in Vienna in 2005 and provides consulting services for research and development projects in the fields of logistics, transport and traffic, and supply chain and innovation management.	hh@h2pro.at
MSC BIKES	MSC Maderna Cycle Systems develops new transport concepts and vehicles. The aim is to offer alternatives to driving, especially in urban areas.	mcsbike.com
NAST CONSULTING	Nast Consulting company offers support in four key areas: research & development, transport engineering & road safety, transport infrastructure planning, and traffic management. The Research and Development division handles topics and projects that are particularly relevant to logistics.	www.nast.at
TBW RESEARCH	tbw research is a non-profit research and consulting firm working in the fields of mobility, logistics and goods transport, with considerable expertise in these areas. It is currently supporting the Austrian BMK in the implementation of innovative logistics concepts, with the goal of providing various projects with recommendations for action and possible solutions.	tbwresearch.org
VELOCE	The veloce company specialises in deliveries for companies and private customers. Veloce delivers consignments weighing up to 1,000kg throughout Austria, while remaining 100% climate neutral. In urban areas, Veloce uses electrically powered cargo bikes to deliver parcels, thus promoting the implementation of smart city logistics in Vienna and other cities.	veloce.at



Technology reports are available on the following topics:

- AAL (Ambient Assisted Living)
- Additive manufacturing
- Big data and AI
- Blockchain
- City Logistics
- Cloud computing
- Data4Good
- e-Commerce
- e-Government
- e-Health
- Enterprise Software
- Entertainment Computing
- FinTech
- Green Building
- HR-Tech
- Intelligent automation and robotics
- Intelligent production
- Internet of Things
- IT-Security
- Food
- Mobile Computing
- Prototyping – from conception to product
- Rainwater in the city
- Technologie erleben
- Urban energy innovations
- Urban mobility
- User Centred Design
- Visual Computing

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