VCÖ
MOBILITÄT MIT ZUKUNFT

VCÖ factsheet

Investing in cycling pays off many times over

The goal of reaching climate neutrality by 2040 can only be achieved through a higher share of cycling. To this end, higher investment in cycling infrastructure is crucial. More cycling also delivers social benefits and is an important economic factor.

At the Austrian Cycling Summit on 4 April 2022, the federal government, the federal states and municipalities signed an agreement aimed at increasing the share of cycling from currently seven to 13 percent and they are committed to consistently implementing the necessary measures.[1] This aim is also laid down in the Cycling Masterplan 2015-2025, in the Austrian health targets, in the national Climate Strategy 2050 and in the Mobility Master Plan 2030.[2,3,4,5] According to the latest comprehensive mobility survey for Austria from 2014, the share of cycling stood at 6.4 percent.[6]

Significant potential for cycling

The share of cycling in the Austrian federal states ranged from four percent in Carinthia to 16 percent in Vorarlberg.[6] The share also varies considerably in the state capitals, from two percent in Eisenstadt, nine percent in Vienna up to about 20 percent in Salzburg, Graz and Bregenz.[7,8] The potential for cycling is by far not yet exhausted. In the cycling strategy of the city of Salzburg, for example, a cycling share of 30 to 40 percent is considered possible.[9] Investment in the cycling infrastructure as well as favourable framework conditions are required to achieve these goals.

Examples of new mobility

Photo: Werner Ried, VCÖ

Bicycle zone for 6,000 people in Saarbrücken

Since 2020, it has been possible to create bicycle zones in Germany.[54] In the same year, Bremen implemented the first bicycle zone.[55] Saarbrücken followed suit and opened a bicycle zone in the Nauwieser Viertel neighbourhood in May 2021.[56] For the project, a total of approximately 150,000 euros was earmarked.[57] The bicycle zone consists of 14 bicycle streets and covers an area of about 700 by 500 metres. About 6,000 people live in the area of the bicycle zone. In bicycle zones, a 30 km/h speed limit applies, and side-by-side cycling is allowed. Cyclists can ride in both directions in one-way streets. Cars are only permitted to enter and exit the zone. Cars and motorcyclists must keep a passing distance of 1.5 metres when overtaking cyclists.

For the first time, a comprehensive study was carried out on the investment needs for a high-quality cycling network in Austria. Large investments are required but significantly more money has been spent on road construction so far.

Numerous international cities demonstrate that a large share of cycling is possible, for example Copenhagen with a share of 28 percent, Münster with about 40 percent or Oldenburg with 43 percent.[10,11,12] In Amsterdam, 36 percent of the inhabitants cycle on working days.[13] However, not only large cities have great potential for cycling. In the Netherlands, there are 202 small cities where the share of cycling exceeds the car mode share.[14]

Gaining new target groups as a main goal

An established typology shows that, apart from seven percent of "enthused and confident" riders and one third of the "no way, no how" type, the largest category is the "interested but concerned" group with a 60 percent share.[15] This group prefers safe, physically separated cycle facilities and can be targeted by investing in high-quality cycling paths.[16] The share of cycling can only be significantly raised if cycling planners focus on the needs of this target group.

An analysis based on 62 international cities shows that what is important for a high-quality cycling infrastructure is not so much the total length or individual sections but the functionality and quality of the network. Continuity, directness and comprehensive accessibility of all relevant city districts are thus basic requirements for a cycle network to work well.

To this end, city-wide planning and growth strategies are crucial – and also more cost-efficient. The study suggests that piecemeal improvements over decades or separate planning for individual districts or neighbourhoods make a poor growth strategy and increase the required investments by at least three times.[17]

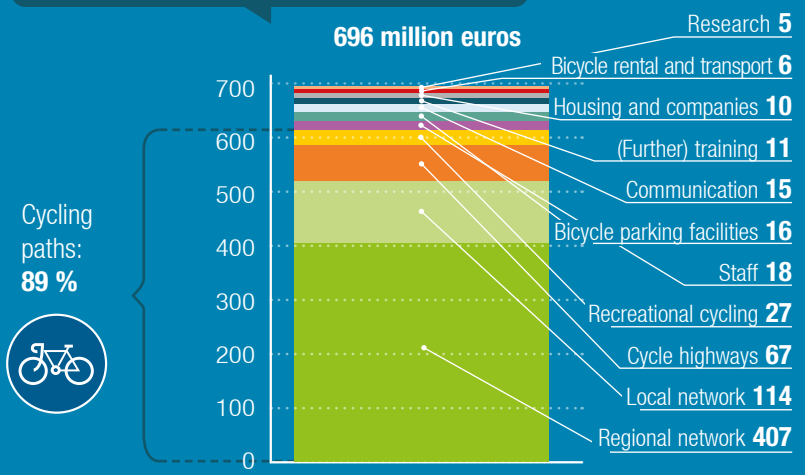
Rising popularity of cycling

Different factors such as increasing health and climate awareness and the growing trend of e-bikes are making cycling more popular. In a representative survey conducted during the Covid-19 pandemic in autumn 2020, 62 percent of the Austrian population assumed that the use of bikes would increase in the long run after the end of the pandemic.[18] In Vienna, the number of cyclists reached a record high in the first quarter of 2022, with a 76-percent increase over the first quarter of 2018 and a 26-percent rise compared to 2019.[19]

The popularity of e-bikes has contributed to this trend. In Austria, about 865,000 e-bikes were sold in the years from 2017 to 2021, which is about twelve times the number of e-cars.[20,21] Of the approximately 490,000 bikes sold in 2021, the

Achieving the cycling target requires investments

By comparison: The federal government, federal states, municipalities invest about 4 billion euros per year in road construction



Annual investment required for the planned or calculated cycling infrastructure until 2030 (in million euros)

Source: Planoptimo/Verracon 2022[32], Asfinag 2022[33], Statistik Austria 2020[34] Chart: VCÖ 2022

market share of e-bikes was 45 percent and the sales share even 73 percent.[22]

Exploiting the potential of e-bikes by expanding infrastructure

Using an e-bike significantly increases the distance that can be travelled. Data from Vorarlberg has shown that commutes made by e-bike are 25 percent longer on average than those made on conventional bikes, while total daily journeys are even 49 percent longer.[23] However, this potential due to the greater range can only be exploited if a supra-local cycling infrastructure for longer distances is available. In the Copenhagen metropolitan area, there are already about 200 kilometres of cycle superhighways available, and the network is to be expanded to 850 kilometres by 2045.[24]

The Hamburg metropolitan region plans to build 300 kilometres of cycle highways.[25,26] In Austria, the federal states of Vorarlberg and Lower Austria have each announced plans to create 200 kilometres of cycle highways.[27,28]

Planning for possible future demand

The new version of the official guidelines and regulations for road construction (RVS) for bicycle traffic published in April 2022 not only includes a chapter on bicycle parking facilities but also, for the first time, covers the topic of fast cycling routes.[29] The RVS guidelines represent the current state of the art and are applied for the planning of road infrastructure in practice.[30] Other new features are the replacement of minimum and standard widths by base widths plus additional space depending on the volume of bicycle traffic, and the introduction of a demand criterion which will allow cycling planners to take into account possible future demand.[31] This ensures that proactive network design is incorporated as a principle in the RVS guidelines.

Cycling requires large investments

When it comes to infrastructure, a principle of traffic science applies: supply creates demand. Therefore, to boost the cycling modal share, a consistent expansion strategy for the cycling infrastructure is required. In May 2022, a study was published which estimates the investment required to achieve the cycle network plan in Austria. The planned or calculated regional cycling infrastructure is to be about as long as the higher-ranking road network. For settlement areas with at least 100 inhabitants, the planned or calculated local cycling infrastructure is set to have at least four kilometres of cycle routes per square kilometre, in Vienna ten kilometres.

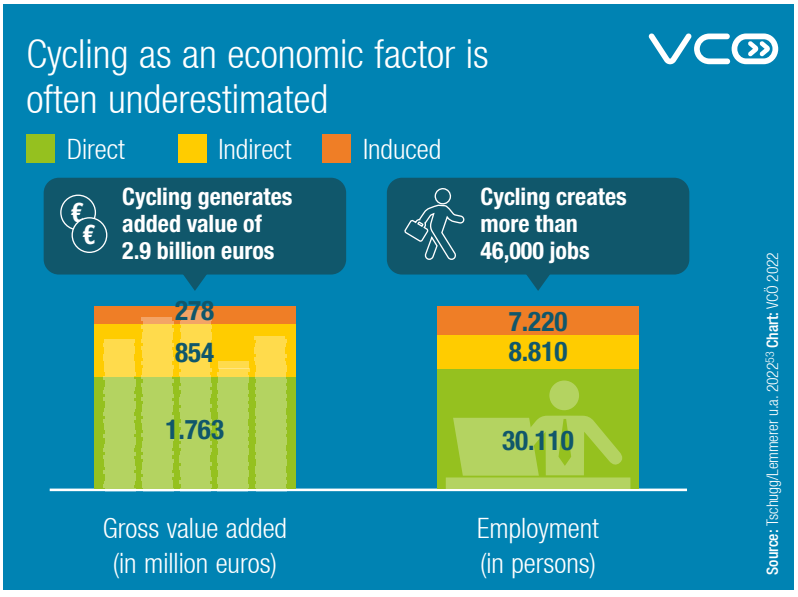
Examples of new mobility

Photo: Ralf Rühmeier/SenUMVK Berlin

Flaniermeile Friedrichstraße

At the end of August 2020, during the Covid-19 pandemic, a 500-metre section of Berlin's Friedrichstraße was closed for cars and declared a boulevard as a temporary measure. An analysis of data published in April 2022 shows that the number of pedestrians increased from July to September 2021 by 51 to 61 percent year-on-year, while the number of cyclists rose in July and August 2021 by 31 and 37 percent respectively. As regards cycling, the *Flaniermeile* is highly attractive and has a bundling effect. Moreover, it was observed that pedestrians change the side of the street significantly more often and that the number of visits and the average time spent have risen – all of which indicate a higher quality of stay.[58] The temporary Friedrichstraße project is therefore planned to be continued permanently.[59]

Turnover generated by cycling spreads across many industries. That is why its economic relevance is often underestimated.



Examples of new mobility

Photo: Jurjen Drenth

Where there is a will, there is a (cycle) way

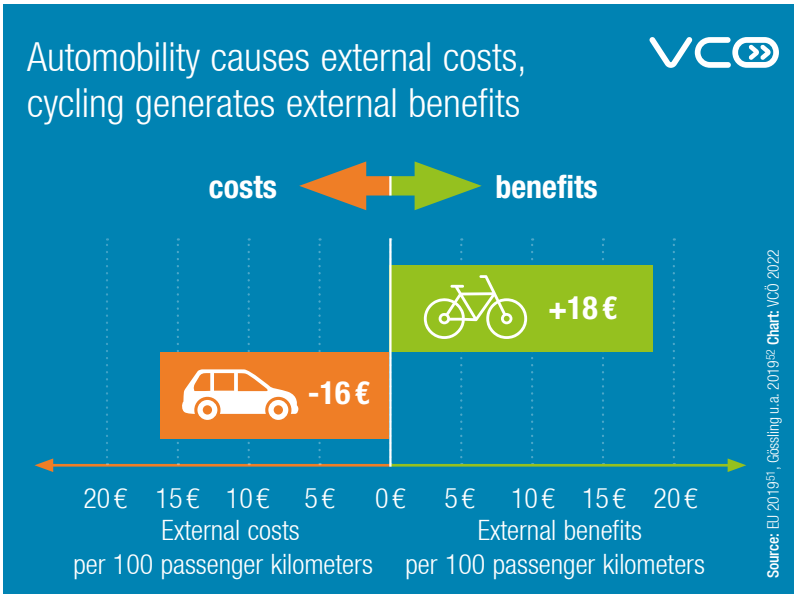
In 2010, the new city government of Utrecht took a fundamental decision with respect to transport policy: walking and cycling have priority. The plan was centred on the implementation of five main routes to establish good cycling connections to all parts of the city, supported by traffic calming measures, car-free streets and cycle-friendly traffic light phasing. Investments were also made in bicycle parking facilities, especially at train stations for commuters. In 2019, the world's largest bicycle parking garage opened at the main train station, with space for 12,500 bikes. From 2015 to 2020, 186 million euros were invested in cycling. The share of cycling now accounts for 39 percent, about half of the journeys up to 7.5 kilometres are cycled, and bicycle use increases by 4 percent annually.[60]

External effects occur when individual behaviour has an impact on the public – both in terms of costs and benefits.

The estimated investment required for the intermediate of three scenarios is up to 696 million euros per year until 2030, of which almost 90 percent are earmarked for the expansion of the cycle route infrastructure.[32] However, much more money goes to the already well-developed road network. By comparison, publicly-owned road operator Asfinag invests more than one billion euros every year in the maintenance and expansion of motorways and expressways, and another three billion euros are paid by federal states and municipalities for road construction.[33,34]

The per capita investment in a region can be used as a benchmark for the status quo of investments. A minimum of 30 euros per capita and year is generally assumed, for instance in Germany's current National Cycling Plan, to be a reference value triggering significant mode shift effects toward more cycling.[35,36] The city of Münster invested about 33 euros per capita in cycling in 2020.[37] Copenhagen spent about 36 euros, Oslo 70 euros and Utrecht 132 euros.[38] According to the investment study, Austria has to invest about 77 euros per capita and year to ensure implementation of the planned or calculated cycling infrastructure by 2030.

Austria still has a long way to go. In the period from 2011 to 2015, the federal states invested an average of four euros, and the state capitals five euros per capita and year in cycling.[2] According to the cycling strategy of the city of Salzburg, about one million euros has been invested in cycling annually so far; an increase to two million euros is called an "ambitious" development strategy and a rise to four million euros a "top level" development strategy. The figure per capita is currently six euros, the costs for the ambitious goal would be 13 euros and that for the top-level target 25 euros.[9] In Vienna, more than 100 million euros are earmarked for cycling infrastructure expansion in the 2020-2025 legislative term, which is about ten euros per capita and year.[39]



Legislation may reduce investment costs

Especially in densely built-up areas, the space available for physically separated cycling paths is often very limited. If one assumes an average rate of 600,000 euros per kilometre of physically separated cycling path, the investment costs for a cycle route network alongside municipal roads with a 50 km/h speed limit would add up to several billion euros in Austria.[32,a] The RVS guidelines lay down that, depending on the volumes of traffic, with a 30 km/h speed limit, cycling on the carriageway is possible in mixed traffic.[29] Thus, imposing 30 km/h speed limits and two-

way cycling in one-way streets can reduce investment costs significantly in the local network if traffic volumes also go down.[40] The problem of limited road widths and the resulting gaps in the cycle network can be solved in many cases by extending 30 km/h speed limits to more roads and enabling cycling in mixed traffic.

In Austria, Graz is a role model in this respect. Already back in 1992, the city introduced a 30 km/h default speed limit on all urban roads, with the exception of priority roads.[41] Internationally, 30 km/h speed limits are also becoming increasingly popular. For example, Spanish cities implemented a 30 km/h speed limit on about 80 percent of all roads in May 2021.[42] In August 2021, Paris introduced a 30 km/h default speed limit on all roads in the city centre, except for a few ring roads, arterial roads and transport links.[43] In Austria, the municipal council of Innsbruck voted in March 2022 to implement a 30 km/h default speed limit.[44]

Two-way cycling in one-way streets

Another cost-efficient measure to improve the cycling infrastructure is allowing cyclists to travel against the flow in one-way streets.[45] In the interest of traffic safety, a 30 km/h speed limit should be a prerequisite for this.[46] In Vienna, for example, 354 kilometres, or about 40 percent, of the 813 kilometres of one-way streets were open for cycling against the traffic flow in 2020, compared to a mere 89 kilometres in 2000.[47,48] In Innsbruck, cyclists are allowed to ride two-way in 60 (44 percent) of the 136 one-way streets.[49]

According to the RVS guidelines for bicycle traffic, two-way cycling in one-way streets can also be implemented with lane widths of less than 3.5 metres provided that certain conditions such as the provision of passing places and sufficient meeting sight distance are fulfilled.[29] At an international level, cycling against the traffic flow has already been implemented in many countries, for example, in Belgium – already from three meters' lane width – since 2002, in France since 2010 and in Switzerland since 2016. Where cycling against the flow in one-way streets is too dangerous owing to local conditions, it can be forbidden with due justification.[46] In Austria, a decree by the competent authority has been required for each one-way street so far. In the course of drafting the 33rd amendment to the Austrian road traffic regulations (StVO) in 2022, a new regulation will be voted on.

Examples of new mobility

Foto: Frobles_cc by-sa 4.0 (Wikimedia commons)

More cycling paths, more cycle traffic

In the early 2000s, the Spanish city of Seville had 12 kilometres of unconnected cycling paths. In just four years, by the end of 2007, a basic cycle network of 77 kilometres was built with a particular focus on segregation from car traffic, uniformity of pavement and signposting, continuity and connectivity to all areas of the city. The required surface space was mainly gained by narrowing the car lanes. By 2011, the cycle network had been extended to 120 kilometres. Before the network was built, the share of cycling was 0.5 percent. In 2011, the figure already stood at 5.6 percent. While the number of cyclists rose, the risk of road traffic accidents dropped. The share of female cyclists increased from 13 percent before to 36 percent after completion of the basic network. By 2021, the cycle network was expanded to 175 kilometres.[60,61]

Cycling investment creates benefits

Investments in cycling boost the cycling modal share. This has been proven many times over. A study carried out for 106 cities shows that the so-called pop-up bike lanes created during the Covid-19 pandemic generated between 11 and 48 percent additional cycling in the period from March to July 2020.[50]

The expansion of the cycle superhighways in the Copenhagen metropolitan area led to an increase in the number of cyclists on existing routes on weekdays by 23 percent on average. On the Farum route, which was turned into a cycle superhighway in 2013, the number of cyclists rose by as much as 68 percent between 2010 and 2018.

Cycling as an economic factor

Cycling investment also creates other added value. In general, the higher the level of cycling, the lower the risk of road traffic accidents – the so-called safety-in-numbers effect.

In practice, this can be seen in Copenhagen or Amsterdam, for example, where the risk of road traffic accidents is one accident for every one million bike journeys. In many German cities with lower cycling rates, this figure is ten times higher.[38] While automobility incurs social costs due to accidents, exhaust emissions, etc., cycling represents a benefit to society worth 18 euros per 100 kilometres.[51,52]

High added value, many jobs

The cycling industry is divided into many sectors and its economic significance is often underestimated. According to a recent study, the net turnover of the Austrian cycling industry amounted to more than 3.7 billion euros in 2019.[53] The five sectors with the highest turnover, which together account for almost 92 percent of total turnover, are accommodation, retail, the restaurant business, bicycle production and sports services. The total gross value added including indirect and induced effects is around 2.9 billion euros per year. About 30,000 people are directly employed in the cycling industry; including indirect and induced employment effects, the figure climbs to more than 46,000.[53]

The bicycle boom is also reflected by increasing professionalisation. In 2019, two new apprenticeship programmes for „sports equipment specialists“ and „bicycle mechatronics technicians“ were introduced, after the bicycle mechanic apprenticeship had been abolished in Austria in the 1970s.[53]

Sources online under:
www.vcoe.at/publikationen/vcoe-factsheets

VCÖ recommendations

Climate targets can only be achieved by investing billions in cycling

- To achieve the climate targets, the share of cycling must at least double. To this end, billions of euros of investments in cycling are necessary.
- Physically separated, safe cycling paths are key prerequisites for attracting the large group of the undecided to cycling and enabling children to cycle independently.
- Regulatory measures such as 30 km/h default speed limits in urban areas and two-way cycling in one-way streets can help save billions of investment costs and can be implemented quickly.

Cycling reduces costs and boosts the economy

- Promoting cycling is active health policy which can help reduce healthcare costs.
- The economic significance of cycling is high, especially in a popular tourist destination like Austria.

Michael Schwendinger, VCÖ - Mobility with af future:
„If we want a higher level of cycling, we must invest in cycling. Numerous examples prove that this investment pays off many times over. All the facts are on the table. What is required to build a high-quality cycle network is the political will.“

In 2022, funding for active mobility measures in the amount of up to 60 million euros is available within the framework of klimaaktiv mobil. The funding programme is aimed especially at cities and municipalities for the construction of safe walking and cycling infrastructure. For a free consultation, please contact: **klimaaktivmobil.at/gemeinden**

klimaaktiv mobil

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