



CAIRGO BIKE FOR PROS

A conversion journey to cargo bikes for Brussels professionals

Lessons learned and recommendations after 3 years accompanying Brussels-based professionals in their conversion to cargo bikes through the cAIRgo bike project

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SUMMARY

From 2020 to 2023, urbike - a cycle logistics cooperative based in Brussels - participated as a partner in the [cAIRgo bike project](#). **The project aimed at improving air quality through the conversion of Brussels' population to cargo bikes.** Urbike, alongside other partners, worked on reducing the barriers to access to cargo bikes, and in particular the lack of information, training and advice. As a cycle logistics operator, urbike was responsible to accompany professionals in their conversion and provide the necessary support for successful long term implementation. In this report, we will go through the work and lessons learned of urbike's participation in this project. This report aims at providing concrete insights on use cases, gives recommendations and demonstrates the potential of cargo bikes to decarbonise urban traffic.

The main lessons learned of this report are:

- **The potential for converting to bikes and cargo bikes is enormous.** With the increasing awareness of environmental issues and the need to reduce our carbon footprint, more and more people are turning to bicycles as an alternative mode of transportation. Cargo bikes, in particular, have become increasingly popular due to their versatility and functionality. They can be used in a wide range of sectors and activities, from small business deliveries to large-scale logistics operations.
- **There are numerous motivations for making a switch to cargo bikes.** One of the primary motivations is the reduced costs associated with cycling. Compared to motorised vehicles, cargo bikes can be significantly more cost efficient even though the total cost of ownership tends to be underestimated. Another important motivation is the agility in traffic of cargo bikes. Congestion and lack of parking spaces have little impact on cargo bike mobility. A third important motivation is the positive impact on the environment by reducing air pollution and carbon emissions.
- Despite their benefits, **there are also obstacles that need to be overcome when converting to cargo bikes.** Weather conditions were identified to be a significant obstacle for those who rely on cargo bikes for their professional activities. In addition, lack of information and training are also important barriers. In many cases, professionals tend to overlook cargo bikes as a relevant solution due to a compatibility that is not apparent with their activities. Thirdly, interactions with road users is also an important barrier. And finally, the purchasing price is an important obstacle.
- **To successfully convert professionals to cargo bikes, several factors need to be considered.** First, it is essential to provide the possibility to try cargo bikes before finding the right vehicles. On the one hand, it helps to overcome the fear of difficult riding. On the other hand, there are a lot of different vehicles and finding the one that is the best suited for a professional activity is not always straightforward. In a similar fashion, access to training and information are critical to ensure that professionals make the right choices, learn how to ride safely and efficiently. Finally, being able to test the material in real life conditions can help to build confidence and overcome any remaining fear or doubt that professionals may have about using cargo bikes.

In conclusion, while the potential of conversion to cargo bikes is huge, professionals face a number of obstacles. Yet, the benefits of cargo bikes are numerous and with the right information, training, and support, professionals can successfully make the switch to cargo bikes.

INTRODUCTION & CONTEXT

Cargo bikes have become a trending topic in the last few years. Yet their existence is nothing new, cargo bikes were already used during the beginning of last century but were soon after replaced by motorised vehicles. With the increasing importance of environment protection and the impact of negative externalities resulting from motorised traffic (e.g., air pollution, congestion, noise, accidents), **cargo bikes have emerged as a relevant and sustainable solution** to cars, vans, and trucks. While they offer a reasonable loading capacity, their environmental impact is significantly lower and their agility in traffic make them particularly efficient modes of travel in urban areas. In a study published in 2017 on the potential of cargo bikes as a sustainable solution for urban logistics¹, Jochen Maes estimated the external costs of cargo bikes compared to light commercial vehicles (LCVs). His research showed that each kilometre made by LCVs, costs 94% more to the civil society and authorities than cycled kilometres.

External costs	Cycling (EURct/vehicle.km)	LCV (EURct/vehicle.km)
Congestion cost	0.00	1.35
Climate change cost	0.00	0.03
Emission cost	0.00	0.04
Up- and downstream cost ²	0.00	0.013
Noise emission cost	0.00	0.00001
Accident cost	0.09	0.003
Wear and tear cost	0.00	0.01
Total external costs	0.09	1.44601

Consolidated external cost of urban freight transport in EURct/vehicle.km (J. Maes, 2017)

If we observe transport carbon emissions from a different angle, transport of goods in LCVs accounts for 17% of urban traffic in terms of covered kilometres in Brussels. Yet, they are responsible for 41% of emissions of nitrogen oxides (NO_x), 30% of fine particles' emissions (PM_{2.5}), and 29% of carbon dioxide emissions (CO₂)³. For several years, reports highlighting the **environmental impact of freight transport** have been accumulating, which emphasises the need to consider greener and more responsible alternatives such as cargo bikes. In addition, the transition to sustainable mobility is one of the priority measures of the European Green Deal with a target of carbon neutrality by 2050.

Yet, the potential of cargo bikes does not only rely on greening freight transport. They are already widely used by cycle logistics companies all over Europe. But to contribute to positive changes on a larger scale, it is also important to **consider all transport activities occurring in a professional context**. It

¹ J. Maes, 2017. The potential of cargo bicycle transport as a sustainable solution for urban logistics, PhD thesis, Universiteit Antwerpen.

² Climate change and air pollution costs of energy consumption and GHG emissions of up-stream (extracting raw materials) and downstream processes (processing materials collected during the upstream into a finished product); i.e. the energy needed for the generation of energy (e.g. fuel pumps, excavation of coals, transport).

³ Data from Bruxelles Mobilité (2020) and Bruxelles Environnement (2022)

might concern an independent electrician transporting his equipment from a customer to another, a mobile service provider, or simply moving from a point A to a point B for example. The diversity of relevant applications is large. If we consider all freight journeys, it is estimated that 51% of them could be replaced by bikes or cargo bikes⁴. **In short, the potential for conversion to bikes and cargo bikes is huge.** According to FRETURB (2013), the total mileage of freight transport in Brussels-Capital Region is estimated at 1.648.670 km per week. The biggest generators in terms of distance travelled per week are small trade (26%), warehouses and transport (20%), wholesale trade (19%) and crafts and services (16%).

In this context, the Brussels-based cycle logistics cooperative urbike participated in the cAIRgo bike project (2020-2023) to **accelerate the transition towards more sustainable and liveable cities**. The project, co-financed by the European Regional Development Fund through the Urban Innovative Actions initiative and Brussels-Capital region, aimed at increasing the use and access to cargo bikes in Brussels in order to improve air quality. The consortium involved public and private partners, and is coordinated by Brussels Mobility. The project targets the most important barriers for professionals and private users:

- Access to secured parking places for cargo bike (parking.brussels and BePark);
- Financial support for micro, small and medium enterprises (Brussels Economy and Employment);
- Development of shared cargo bikes and trailers' offer (Cambio and Remorquable);
- **Access to information, tailor-made advice and training for citizens (ProVelo) and professionals (urbike).**

These activities were supported by communication campaigns (Brussels Mobility), an evaluation of external costs of cargo bikes (Vrije Universiteit Brussel), and measurements of the positive impact of the use of cargo bikes on air quality (Brussels Environment).

With regard to the conversion of the Brussels professional public to cargo bikes, urbike has designed **a comprehensive guidance programme “cAIRgo bike for pros”** (see the detailed roadmap below), resolutely practical, adapted to the technical and professional needs of the participants and organised in 2 formulas : for large organisations on the one hand, and micro, small and medium-sized enterprises on the other. From March 2021 to April 2023, urbike accompanied about **200 companies** in their conversion process, including 30 large, and 170 micro, small and medium enterprises. More than 300 people participated in the theoretical and practical trainings and 150 in pilot tests. Aside from the *cAIRgo bike for pros* conventional accompaniment, 400 people were reached during various test and ride events.



On-site visit in Jette for a cargo bike training session (urbike, 2021)

⁴ This number is reached by considering all relatively short freight journeys with a moderated loading (S. Wrighton and K. Reiter, 2016. CycleLogistics - Moving Europe Forward)

cAIRgo bike for pros: conversion roadmap

1. Needs analysis and introductory test session

The initial step of the program consists in a needs analysis of the organisation. The participants explain their activities, how they work, what they transport, what their motivations and obstacles for the use of cargo bikes are. The collected information is used by urbike to provide tailor-made advice (incl. evolution of the operating mode) and information on the best-suited solution(s). This step usually takes 2 meetings with the project team.



In large companies, the transition towards more sustainable transport is often a top or middle management's decision and it might be difficult to motivate future end-users. Therefore urbike organises **on-site visits and introductory test sessions to encourage potential candidates** (see pictures above). These test sessions are short (2 hours maximum), very interactive and are organised in a friendly - almost recreational - atmosphere with the aim of breaking the ice with the participants, arousing their curiosity about the cargo bike and launching the conversion journey in a positive dynamic of adhesion/support for the project. Being able to test cargo bikes often unlocks motivation and encourages future end-users to participate in the transition process. Moreover, these sessions allow us to gather valuable information on the reality of each profession (and of each participant) and to understand the challenges/opportunities associated with a possible conversion of their professional activities to cargo bikes, which is necessary to co-construct a successful conversion roadmap.

2. Training

The introduction and needs analysis are followed by a training program with the future end-users. The training includes a theoretical introduction and a practical session of testing and learning to drive several types of cargo bikes and trailers, first in a safe environment (unloaded then loaded) and then in traffic. Complementary topics such as good cycling equipment, navigating applications, traffic regulations or organising one's working day by bike are addressed.



A collective training at urbike's hub with SMEs and PMEs (urbike, 2023)

The training sessions take about 4 hours and are organised with limited groups (up to 12 participants) and 1 or 2 qualified trainers in order to offer the best possible support to the participants and to maximise interactions. For SMEs and micro-enterprises, the training sessions are collective and organised at urbike (while the rest of the programme is individualised). For large organisations, training

sessions are dedicated and can be organised at urbike or within the company (e.g. if the company already has a fleet of cargo bikes). A training session lasts 4 hours.

3. Pilot Test

Following the training sessions, participants have the possibility to test the cargo bikes and trailers of their choice in their own activities. These pilot tests usually last between 2 and 4 weeks. In order to ensure that the test weeks run as smoothly as possible, a "comfort and safety" pack is distributed to the participants (containing a lock, a repair kit, a map of Brussels cycling infrastructure and technical documentation on the bike) while professional technical equipment is also available to participants who wish to borrow it (i.e. rainwear, helmets, telephone holder). These test weeks are free of charge for participants, but a deposit is required to borrow the equipment.



Last briefing to a team of Vivaqua technicians before their weeks of pilot testing (urbike, 2021)

The goal is to confront the use of cargo bikes to the reality of the field and identify additional barriers. If an additional barrier is identified, urbike will continue the accompaniment and use its experience and expertise to find a relevant alternative.

4. Evaluation

In the last step, an evaluation of the pilot test is conducted with the participants and the management of the companies. The evaluation is an open-discussion based on some predefined questions. to understand the experiences of the end users of the bicycles, see if the bicycle was suitable, if other things need to be adjustedThe goal is to determine the next steps towards a viable and long term transition to cargo bikes.

Through two intensive testing years, **urbike learned the needed ingredients for a successful conversion to cargo bikes:**

Key factors for the conversion to cargo bikes

1. A capacity of 90 kg and 650 L for cargo bikes and 200 kg and 1000 L for trailers

Cargo bikes and/or trailers can transport up to more than 200 kg. A freight of under 90 kg can usually be transported with a "normal or polyvalent" cargo bike. To increase the load, a professional trailer can be added, which can add 50 to 200 kg of capacity (depending on the trailer model). Some electric trailers can transport even higher loads, but they remain limited to very specific uses. From experience,

we recommend a maximum load of 200 kg with a combination of a cargo bike and a trailer, to still be able to climb the steepest streets.



From the transport of electronic equipment for the VRT (left) to a complete mobile control room for the RTBF (right), cargo bikes meet a wide variety of needs for media companies (urbike, 2021)

In terms of volume, up to 650 L is transportable by larger cargo bikes. Some originality is required for long loads. For the hydrant service of Vivaqua which was accompanied in *cAIRgo bike for pros*, a 1m25 long tool (the hydrant road key steel) was longer than the length of the loading platform of a normal cargo bike, as such a small trailer was specifically co-designed during the cAIRgo bike project to transport the tool vertically. In many cases, a lot of material stored in the van turned out to be used only very exceptionally. The first step in the analysis was therefore to look at what material was needed on a daily basis and to reflect whether it was possible to plan (more) in advance what had to be taken with, in order to facilitate the use of cargo bikes.

2. Daily distance of 30-40 km a day is feasible

A distance of max. 30-40 km a day is very feasible with an electric cargo bike for average users. Increasing these distances requires a sportive profile of users. Interesting to know, 60% of trips in the Brussels-Capital Region are less than 5 km. The region and range where a company works is of course of great importance in its potential transition towards cargo bikes. Several small construction companies purchased cargo bikes after our training, but mostly those working locally, only accepting clients in the city or even their own municipality. Some had clients spread over the country, even when working alone, and as such the cargo bike could only be used very sporadically.

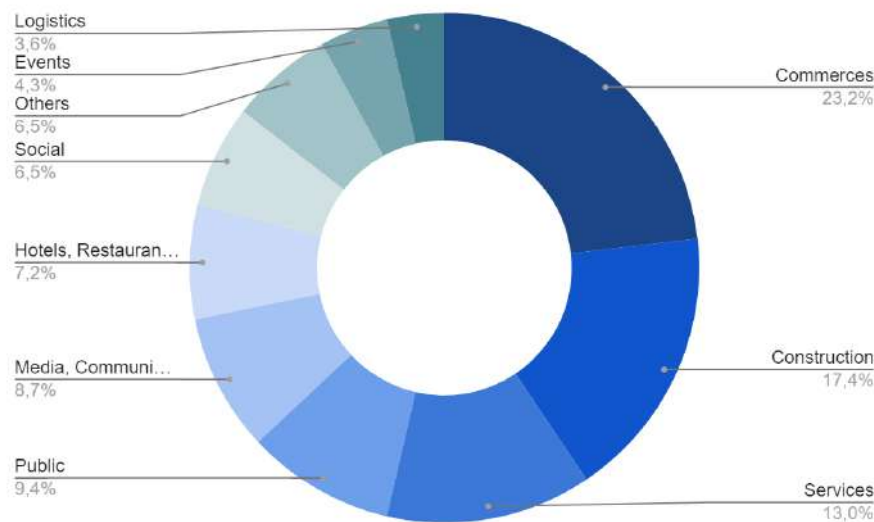
3. Users which are at ease on a bike

Each transition is a step by step process, and the use of cargo bikes requires basic cycling skills from the users before they can learn how to ride cargo bikes. The habit of urban cycling, on the other hand, was not present among all users, and was partly acquired through the urbike's training or extra training on traffic. If we look at the profiles of participants in the *cAIRgo bike for pros*' program, we observe that most participants were regular bike users. The graphs below highlight the habits of participants when it comes to professional and private use of bikes.



HIGH POTENTIAL SECTORS

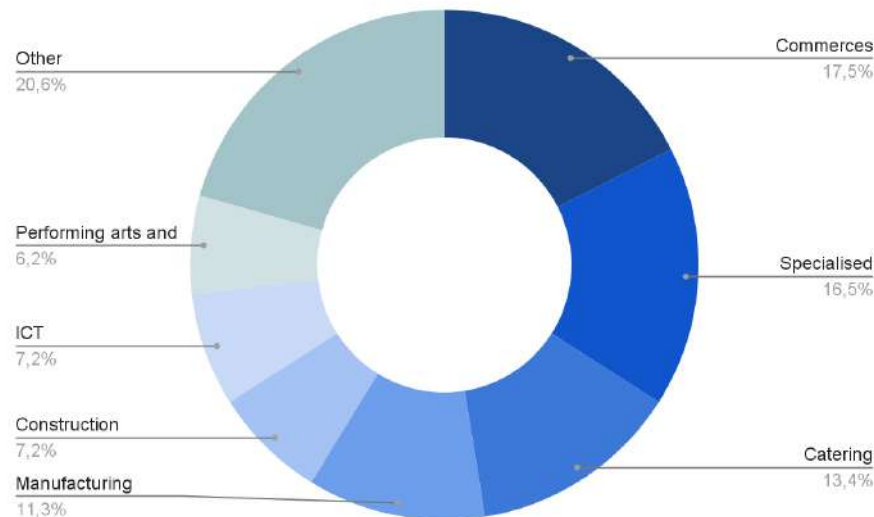
What professions are the best suited to cargo bikes? Among the most successful cases accompanied through cAIRgo bike are technicians (telecommunication, building maintenance, construction, etc.), photographers, a vegetable growing cooperative, national television companies, police canine unit, electricians, local shops or public cleaning service of municipalities. In short, it highlights the wide variety of professions that were accompanied throughout the project. It also shows the **diversity of applications of cargo bikes and how they can be a relevant solution for many sectors and professions**. Whether the cargo bikes can be an added value, depends not so much on the profession, but the way the daily professional movements are organised in a specific company. The graph below shows the diversity of participating organisations in the *cAIRgo bike for pros'* program. As mentioned before, retailers, construction companies and service providers are the most represented sectors. Quite interestingly, public institutions are also well represented. This speaks to the willingness of public institutions to show the example by starting their own transition towards more sustainable transport.



Diversity of participating companies in the cAIRgo bike for pros' program (urbike, 2023)

It is also interesting to look at the companies that **receive financial support to purchase a cargo bike and/or a trailer** to identify more specifically the sectors that concretely switched to cargo bikes in the last 2 years in Brussels. As part of the cAIRgo bike project, a purchasing subsidy was accessible for only MSMEs of specific activity sectors, registered in the Brussels-Capital Region⁵. The reasoning behind this restriction is that for MSMEs, the main incentive would be the access to funding mechanisms, whereas for larger enterprises, access to training would be the most important incentive. In total, 290 companies received a purchasing subsidy between mid 2021 and end of 2022. Most of the beneficiaries were uni-personal structures. The beneficiaries were mostly active in the sectors of retail (17,5%), specialised activities (16,5%, regroups different NACE codes, including photographers, architects, technical advice, etc.), catering (13,4%), manufacturing (11,3%) and construction and ICT (both for 7,2%).

⁵ See "Prime Cairgo Bike" : <https://economie-emploi.brussels/prime-cairgo-bike>



Diversity of beneficiaries of financial support in cAIRgo bike (BEE, 2023)

Services

During the cAIRgo bike project, urbike accompanied many technicians working in Brussels only, or within a specific zone of activity, performing small-scale technical interventions. They often had between 5-10 stops a day and found themselves stuck in traffic and losing time finding parking for their vehicles. Their limited need for material made the most compact cargo bikes, well adapted working vehicles. Some of the successful conversion roads towards use of cargo bikes were of the following companies:

- Sibelga - **distribution network operator for electricity and natural gas** in the 19 municipalities of the Brussels Capital Region. Acquired 4 cargo bikes for the technicians - metre readers⁶.
- Kone - **operator in construction and maintenance of elevators and escalator**, tested the use of cargo bikes for its maintenance team in Brussels centre and acquired its first cargo bike after the test.
- Immoplaquettes - **concepting and installing engraved nameplates** on buildings - is now renting a cargo bike to install nameplates all over Brussels.
- Citizen Support Platform for Refugees ASBL - **association managing different sites** for refugees accommodation (among other vocations). Uses cargo bikes and trailers for technical interventions and supplies between sites.



Technician of KONE on the road riding a compact cargo bike in Brussels (Brussels Mobility, 2022)

⁶ For more info, read this article (in French) :

<https://www.sudinfo.be/art/975158/article/2022-07-30/sibelga-teste-lutilisation-de-velos-cargos-pour-les-relevés-de-compteurs>

Other service companies successfully accompanied were of the cleaning and laundry sector, such as:

- Clic'N'Clean - **cleaning of B&B's** in Brussels, swapped his subscription to a car sharing system for a cargo bike.
- Dropiz - **washable diaper service**, working with a cargo bike and trailer.
- Le Teinturier de Longchamps - **dry cleaning service** with delivery service by bike and trailer.

Commerce

According to data of Perspective.Brussels, around 20.000 commerce companies exist⁷ within the Brussels-Capital Region. The sector includes consumer goods shops (grocery store, supermarket, jewelry, record store, etc.), commercial services (aesthetic centre, travel agency, insurer, etc.) and HoReCa: hotel, restaurants and cafes.

Some commerces that successfully switched to the use of cargo bikes through the programmes are Vrac (promotes the development of joint purchasing groups for agricultural products) and la Ferme du Chant des Cailles (primary production and commerce of dairy products). Many other commerces decided to externalise logistics and collaborate with local bike courier companies.



Since its participation in cAIRgo bike for pros, the Ferme du Chant des Cailles has been using a cargo bike and a trailer to sell its products on the markets (Ferme du Chant des Cailles, 2023).

Construction

Nearly **95% of companies in the construction sector are very small businesses**, including many electricians and plumbers, for example (Freturb, 2013). While cargo bikes are clearly only useful for a small part of transportation flows, there was a real demand from construction sector to test cargo bikes. Urbike accompanied 26 companies of the Brussels construction industry through cAIRgo bike. The following companies were successfully converted and acquired (a) cargo bike(s):

- Rhino - a **general contractor** company uses its electric bike and trailer as an extra vehicle to go to small building sites.
- H2O - an independent **electrician** acquired a cargo bike to use for (urgent) supply of small materials on construction sites (after delivery of main material the first days) and for small repair interventions.

⁷ Perspective.Brussels, 2017, 'commerces bruxellois en chiffres'.

- BC Materials - a **material production company**, uses its cargo bike for transport of tools to workshops and purchase of small building materials.
- Daniel de Vroey - **expert and tester of insulation and airtightness**- uses a bike and trailer for 90% of his activities, airtightness tests, acoustic tests and training. Is often carrying 70 kg of material.
- Vivaqua - **public water management company** - now uses cargo bikes and small scale trailers for technical controls on construction sites and fire hydrants (see a video of their cAIRgo bike pilot project [here](#)⁸).



Vivaqua: control of construction site on cargo bike (left) and hydrant service with a bike trailer specifically designed for their use (right)

Other interesting examples in Brussels are heating engineers on cargo bikes (Chauffe Marcel) and a locksmith using the cargo bike as its only vehicle (Cyclo-serrurier).

In terms of air quality improvement potential, the construction sector is an important sector to accompany and motivate towards low emission logistics and mobility. Data of the Low Emission Zone in Brussels shows that the construction sector has the highest share (37%) of applications for subsidy for vehicles replacement under the Low Emission Zone. It shows mainly that this sector has **a lot of obsolete vans contributing to bad air quality**, but can also be an indicator for the relative number of vans the sector is owning⁹.

Media

There was a lot of interest in the media sector to use cargo bikes. The two national Belgian television and radio companies – VRT and RTBF, participated in cAIRgo bike, as well as BX1 – a Brussels-based radio station, television and journal company. The big advantage for this sector: **the predictability of transport time and the speed of movement, which is crucial for many news reports**. These 3 accompaniments led to quite different and instructive results in relation to the interest of the cargo bike for this type of activity.

- RTBF - **French-speaking Belgian Radio Television** - after a very promising pilot test involving journalists from the "innovation" unit, they bought e-bikes and trailers which they use regularly for carbon free productions and broadcasts (see the full article [here](#)¹⁰)

⁸ Video of the Vivaqua's conversion journey in cAIRgo bike: <https://www.youtube.com/watch?v=8INhnutnUTQ>

⁹ Source: Bruxelles Economie et Emploi

¹⁰ <https://www.rtbf.be/article/une-regie-mobile-durable-a-la-foire-du-livre-11176191>

- VRT - **Flemish Radio and Television Broadcasting Organization** - while there was a lot of motivation to experience their job as journalists on a cargo bike, the pilot test did not lead to successful results mainly because journalists, videographers and sound man were not linked to a geographical region and were covering the whole of Belgium. Moreover, planning was made at the very last minute, which made the use of cargo bikes challenging.
- BX1 - **Brussels news channel** - decided to rent a cargo bike for covering Brussels based news after a successful test.

Urbike accompanied many other small-scale organisations in the media sector: photographers, videographers, printing houses and **Special Olympics Belgium** - which used cargo bikes for the on-site logistical organisation during their yearly Special Olympics event.



Journalists and technicians of RTBF in preparation for a carbon free production in Brussels (RTBF, 2023), left and Special Olympics Belgium (special olympics, 2022), right.

Public sector

The public sector can play an important role in showcasing the potential of cargo bikes and various European cities already experiment with cargo bikes. The Brussels-Capital Region supports the use of cargo bikes by its municipalities through a dedicated subsidy covering purchase of material (cargo bike, trailer, lock...) notably. During the cAIRgo bike project, urbike accompanied more than half of the 19 Brussels municipalities. Among the various municipal services that have been accompanied during cAIRgo bike, a majority now use cargo bikes:

- **Public cleaning service:** the municipality of Jette tested and acquired electrical bikes combined with professional small trailers for the public cleaning service. Furthermore, the Jette teams are so convinced of the efficiency of the cargo bike for their activities that they now play the role of project ambassadors and inspire other municipalities to take action (such as the municipality of Forest, which started the support program with urbike in 2023 after testing Jette's trailers). Training has also been organised with the team leaders of the public cleaning service of the City of Brussels in driving their fleet of three-wheelers.
- **Cultural service / libraries:** the municipalities of Forest and Ixelles now use a cargo bike for activities of the public library.
- **Public building contractors:** the municipality of Watermael-Boitsfort has its technical staff, responsible for maintenance of public buildings, on cargo bikes.
- **Technical 'handymen':** the 'public centre for Social Welfare of the municipality of Anderlecht has a handyman helping out with small technical jobs at home, on a cargo bike.

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- **Internal post:** the municipality of Evere uses cargo bikes to distribute paper post to different public sites.
- **Transport of elderly:** the public centre for Social Welfare of the municipality of Schaarbeek, now has a cargo bike to transport 2 elderly people. It is used to carry the residents of the resting home to cultural activities and medical appointments in a fun way.



Conversion program with Jette: from an introductory test session (left) to the operational roll-out (right)

Other sectors

Behind the category 'other sectors' some interesting projects hide. Let us mention the 20 students from INSAS (Higher Institute of Performing Arts and Broadcasting and Communication Techniques) tested cargo bikes for their filming and executing their news reports, the cultural centre *Atelier 210* which now uses cargo bikes for their events, the network of 6 daycare centres *OLINA*, uses a cargo bike for technical interventions, or even the canine police unit of Uccle which has acquired bike trailers to transport their dogs for their interventions in the city.

It is clear, the diversity of applicants to the cAIRgo bike for pros programme of urbike was wide.



Canine police unit of Uccle (left) INSAS students on a set (right)

WHY CARGO BIKES

General arguments in favour of cargo bikes

Efficient and agile

Cargo bikes are designed to be efficient and convenient for urban transportation. Cargo bikes are also **agile in urban traffic**, enabling professionals to navigate crowded city streets and bypass traffic congestion, saving time and increasing productivity. Moreover, cargo bikes also allow **parking close to the final destinations**.



“Thanks to the bike, you avoid big detours in the city centre: you can circulate in the pedestrian zone and take the numerous contraflow lanes by bike, it's super efficient” (technician, Sibelga)

Cost-efficient

Cargo bikes can be a cost-effective mode of transportation for urban professionals. They do not require fuel or maintenance costs associated with motorised vehicles, and parking fees are nonexistent for cargo bikes. Over time, using a cargo bike for transportation can result in significant cost savings, making them **an attractive option for professionals looking to reduce their transportation expenses**.



Environmentally friendly

One of the most significant advantages of cargo bikes is their eco-friendliness. Cargo bikes are typically **electric and human-powered**, they limit harmful greenhouse gases emissions or contribute to air pollution. This makes them an environmentally responsible alternative to traditional motorised vehicles, such as cars or vans, which are major sources of urban pollution and congestion. By using cargo bikes for transportation, urban professionals can **reduce their carbon footprint and contribute to a cleaner and greener urban environment**.



Health and well-being

Cargo bikes **promote physical activity**, which can have positive effects on the health and well-being of its users. Riding a bike is a form of exercise that can help professionals incorporate physical activity into their daily routines, leading to improved cardiovascular health, increased muscle strength, and reduced stress levels.

“It's less tiring on a bike. I often have back pain from sitting in my car, but I had no more pain at all with the cargo bike.” (technician, Proximus)



No driver's licence needed

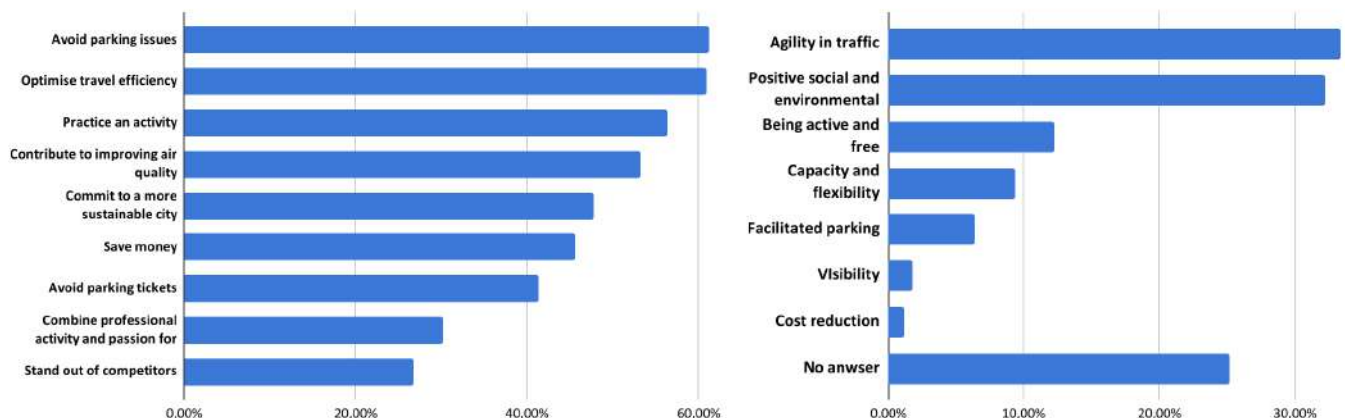
Drivers of cargo bikes do not need a driver's licence, which makes it an accessible transport mode. In many Brussels municipalities as well as big companies, this turned out to be an important element. The cargo bike can give **more autonomy** to employees without a driver's licence.



Motivations

During the cAIRgo bike for pros' project, similar motivations to test and use cargo bikes were observed. Data was collected from a conversion tool and a survey. The conversion tool is a short online questionnaire available on the website of the project (<https://cairgobike.brussels/>) evaluating the compatibility of respondents' activities with cargo bikes and capturing the main motivations and obstacles of the respondents. Based on the answers, it recommends services and information specific to the type of activity of the respondent to ease the transition to cargo bikes.¹¹

Respondents of the conversion tool were mainly people interested in cargo bikes, but who haven't participated in urbike's training processes. Respondents had to choose one to nine motivations. The survey was designed by the VUB - *Vrije Universiteit Brussel* and completed by the participants of the training of urbike. The data on motivations and obstacles was collected in an open question format.



Motivations from the conversion tool on the left (N=378) and the survey on the right (N=153)

For most respondents of the conversion tool, being able to avoid **parking** issues and improve the **efficiency** of their journeys are two crucial advantages of cargo bikes. The survey also highlighted similar results with 40% of respondents mentioning **agility in traffic**, parking, and/or efficiency as a key motivations in their open responses. Cost reduction and cost efficiency were less regarded as a motivation or an advantage. Both the conversion tool and the survey showed a strong willingness of participants to have a **positive impact** and **contribute to more sustainable cities**. Health and well-being were also considered as important, in particular practising an activity and the **feeling of liberty**. Finally, a few respondents mentioned visibility and the opportunity to vehicle a positive image different from competitors.

¹¹ <https://cairgobike.brussels/en/node/155>

“The use of a cargo bike reduced the amount of stress I had considerably... which after a long day of carrying a camera is very important” (Nicolas, BX1 cameraman)

Obstacles

These same surveys also highlighted the main obstacles and barriers to the transition to cargo bikes' activities. Let us mention some of them in order of recurrence.



- **Lack of information (consideration/knowledge):** first, it concerns the lack of consideration for the cargo bike as a relevant solution for their professional activities and the lack of information on relevant use-cases. Secondly, it concerns the lack of knowledge regarding the cargo bikes' offer and their compatibility with the different activities, parking solutions, and the security of the bikes and the material. A tailor-made accompaniment is thus needed to guide professionals towards the best suited equipment for their activities, and then provide the required technical support to facilitate their usage.
- **Weather conditions:** a country like Belgium is not spared by rain, wind, or even snow. However, in most cases, adapted material can facilitate the use of cargo bikes in bad weather conditions.
- **Lack of training and fear of traffic:** cycling in urban traffic can be difficult, even more with a loaded cargo bike. Sufficient training is therefore a must to deconstruct this barrier, increase the efficient and safe riding skills of cargo bike riders, and increase their comfort and confidence in urban traffic.
- **Purchasing price:** cargo bikes usually cost between 4.000 and 8.000 EUR. It is relatively low for a large company or compared to LCV. Yet, for micro, small and medium companies, it is a financial barrier in their transition to cargo bikes. Developing financial support mechanisms is thus also a key element.



Practical training session at urbike's premises (urbike, 2021)

HOW TO CONVERT URBAN PROFESSIONALS TO CARGO BIKES

The *cAIRgo bike for pros* programme offered different services – free of charge – to the Brussels-based professionals to experiment cargo bikes in their daily professional life. Large organisations with over 250 employees were offered an individual trajectory with a presentation and needs analysis with the management and project team, an introduction and test with end-users, practical and theoretical training, pilot test weeks and an end-evaluation. After a first individual contact to understand the nature of their activities and describe their needs (by e-mail or telephone), MSMEs of different sectors were invited to grouped trainings, followed by pilot test weeks and general recommendations and possibility for individual questions.

For both target groups (large organisations and MSMEs), the following principles were key in urbike's approach and the success of conversion:

Testing is adopting

During the whole project, test sessions were organised in collaboration with municipalities, large organisations, federations and event organisers, to promote the *cAIRgo bike for pros* programme and give the users a first experience and acquaintance to cargo bikes. This turned out to be very important, in order to attract new participants and promote the idea of cargo bikes for professional use. The concrete testing of different cargo bikes helped to convince many users to take the next steps.

In the transition project with large organisations and public institutions, one of the first steps was to present the project to the end-users and organise a test session of the cargo bikes. While sceptical voices often prevailed during the introduction conversation (*"I do not believe in the use of cargo bikes"*, *"I do not cycle"*) the ice always broke during the test sessions, and in each of the 30 large companies and municipalities volunteers were enthusiastic to use the cargo bikes during the pilot project. Testing is adopting thus, it is fun, easily convinces end users and makes the project practical very soon.



Testing session in Jette (urbike, 2021)

Finding the right cargo bike

Each activity has its own specificities and for each participant, several factors were important in the choice of the cargo bike and associated accessories. For example, Sibelga (distribution system operator for electricity and natural gas for the Brussels-Capital Region) wanted material to be secure in the cargo bike and opted for a module that can be locked with a key; RTBF (national television) wanted a good

multipurpose electric bicycle that could be used for normal trips, and that could be combined with a trailer for larger loads. Certain self-employed people opted for a sporty model. Other SMEs shared the bike internally for a versatile, accessible bike with seatpost that is easy to adapt to the height of its users. One thing is certain, the choice of the right cargo bike is key, fitted to the activity, profile of users and region (not all cargo bikes are well adapted to hilly Brussels for example).



From the compact cargo bike of KONE to the heavy one of Proximus, there is a diversity of cargo bikes to meet the variety of professional activities

For its test sessions and training, urbike disposes a fleet of various cargo bikes and trailers - different in volume, maniability, modules, lengths, in order to show the different possibilities and find the best fit for each participant. An overview of urbike's training fleet is illustrated below. It includes regular cargo bikes (i.e., two-wheelers and front load), long-tails, three wheelers, small, medium and larger trailers. Being regular users of cargo bikes and trailers, urbike's trainers have years of cycle logistics experience and can therefore provide the best advice on a wide range of modules.



Overview of urbike's training fleet

Need of training

Professional use of cargo bikes in a safe and pleasant way requires training. During cAIRgo bike, urbike accompanied many companies and municipalities that had already purchased cargo bikes, which were ultimately not used due to an accident or frightened employees. Training by professionals puts people at

ease on how to drive empty, loaded and in traffic, and also gives good tips and tricks that make daily use a lot nicer. While not every bicycle fanatic, who is probably quickly accustomed to riding a cargo bike, wants to be trained, training is very important for most and raises the chances to success of the pilot project and potential scale-up of the transition to cargo bikes within the organisation.

The success of our program in Brussels illustrates that need and the lack of training also appeared as an important obstacle in the survey and conversion tool.

Pilot testing - on-site experimentation

Testing different possibilities, finding the right cargo bike and training are important steps towards a transition towards professional use of cargo bikes. Yet, it is possible to increase the chances of long term implementation through on-site experimentation. During the cAIRgo bike project, participating organisations could use the cargo bikes of their choice free of charge¹² for two to four weeks after the training sessions. This way they could test the cargo bike in real-life conditions, **experience the benefits** and **identify potential obstacles**. They could evaluate whether the model was suitable for their activities. For many, the testing on the job was the extra motivation and/or barrier breaker that led to the first purchase of cargo bikes.

Pilot Test at Proximus

Technicians tested the use of cargo bikes in their activities which consisted of installing internet modems in their customers' houses. The pilot test highlighted positive results that were not initially expected by the management and the end-users:

- 1,5 additional interventions per day, which corresponds to an efficiency gain of 30%
- 330 EUR/vehicle/month of cost savings (incl. parking costs, energy consumption, insurance, maintenance costs, loss of value).

Participating technicians were also very positive regarding the pilot test as they reported less fatigue/tension, efficiency gains, or agility in traffic. It also allowed them to raise the question of rain equipment as bad weather had a negative influence on their experience.

Advice on more than bikes!

A transition to using cargo bikes for professional movements does not only require tests, training and technical advice about cargo bikes. It often demands changing work habits (e.g. lunch in the van, habit of keeping all emergency equipment in the back of the car without reflecting whether it's needed for the work of the day, etc.), organising shifts slightly differently, etc.

Urbike guided the professionals in these changes and also provided advice on professional rainwear, bicycle insurance, adapted routes in the city, purchase premiums, rental or purchase options, maintenance, etc. Involving these aspects in the pilot project is almost equally important than the "bike part" for success.

"The pilot test was successful at VIVAQUA thanks to the specific accompaniment of urbike. They used a methodology and analysed the needs and the expectations of each service and its collaborators and helped to identify the right cargo bike for different activities." (Angélique, Vivaqua Green Team)

¹² With rental contract and guarantee

CONTINUING THE MOVEMENT

While the cAIRgo bike project has helped nearly 500 Brussels organisations to convert to cargo bikes through the *cAIRgo bike for pros programme* and the regional purchase incentive, the conversion potential is much higher. The cAIRgo bike project has demonstrated in practice that cargo bikes are particularly suitable for the activities of professional organisations of very different sizes – from micro-enterprises to larger organisations – and in very different sectors of activity. In addition, as stated in the introduction, 51% of service trips in urban areas could be made by bike or cargo bike¹³. Then, considering that there are more than 115,000 MSMEs and about 400 large companies in the Brussels region, it is clear that there is considerable potential for the development of cargo bikes for professionals. In Flanders and Wallonia, there are 680.000 and 280.000 professional organisations respectively¹⁴.

To reach that potential, it is important to **first convert the early adopters** and reach a critical mass that can convince the early majority to adopt cargo bikes. The conversion journeys can be quite different depending on the profiles of the organisations accompanied. In the cAIRgo bike project, we developed two conversion roadmaps, one for Micro Small and Medium Enterprises and the other one for large private companies and public organisations. However, each company has different needs, expectations and constraints, such that it is important to adopt a specific need analysis in order to tackle the major barriers slowing down the conversion process. cAIRgo bike's methodology, based on testing, trainings and pilot test, participation of end-users and in depth advice (on adapted cargo bikes for each activity, available services - for example bike insurance, parking,...) helped in overcoming these barriers with very positive results.

We measured a very high satisfaction rate in the post-training surveys (>90%) and numerous conversion journeys that led to a purchase (or at least to the expression of an interest/willingness to purchase) or even to a wider development of the cargo bike internally at the end of the first conversion trip. Therefore, for any organisation, city or region wishing to develop a cargo bike conversion programme for professionals, we strongly recommend applying such an approach, which **combines personalised technical advice, tailor-made coaching and practical cargo bike initiation and training sessions**.

In a second phase, with a view to spreading the project on a larger scale and making the conversion strategy sustainable among Brussels professionals, it is important to work more intensively on **developing the loyalty/promotion of the early adopters** so that they contribute to the creation of a strong local culture around the cargo bike in the Brussels region. In this context, we believe it is relevant to develop the tools necessary to create and animate a network of cargo bike professionals (recognition), to highlight them (inspiration) and to make them ambassadors for other professionals (mobilisation).

Finally, it seems essential to **support the process of conversion of professionals to cargo bikes in the long term** by working on several subjects in a transversal way, and particularly on the political, legal and fiscal framework inherent to the replacement of thermal vehicles by more sustainable transport solutions. In this respect, the discussions initiated in the framework of the cAIRgo bike project on economic (incentives, insurance) and infrastructural (parking facilities) issues should certainly be continued and intensified. Consequently, we invite regional and local governments to (keep) supporting and setting-up these services **as part of an ecosystem** including better cycling infrastructure, subsidy

¹³ S. Wrighton and K. Reiter, 2016. CycleLogistics - Moving Europe Forward.

¹⁴ SPF Economie & Employment

schemes and communication in order to unlock the potential of cargo bikes and improve the sustainability of urban logistics and mobility.

The modal shift in mobility, which is needed to reach the ambitious targets to reduce emissions in transport and support the adherence to sustainable mobility plans, can be facilitated by promoting and showcasing the potential of cargo bike for professional services. In addition, beyond the very positive environmental impact of abandoning the car/van in favour of active mobility, it is the practical aspect of the cargo bike that was noted by the participants accompanied by cAIRgo bike (efficiency of travel, ease of parking), as well as the pleasant aspect. A solution that reconciles well-being, practical constraints and the fight against climate change certainly deserves to be taken further.



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WALL OF FAME – CAIRGO BIKE FOR PROS



CAIRGO BIKE FOR PROS

