

*cyclelogistics* – moving Europe forward



***D2.3 Feasibility study; screening of business  
to business and business to customer  
deliveries***

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## ***D2.3 Feasibility study; screening of business to business and business to customer deliveries***

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## Contents

- 1. Introduction**
  - 2. Potential for bicycle deliveries**
    - a. Last mile (final kilometre)**
    - b. Sectors using cargo bikes**
  - 3. Cycle Couriers**
  - 4. Pros and Cons of using cycle freight**
    - a. Logistics and transport professionals**
    - b. Additional barriers**
  - 5. Ability of freight bikes to meet demand**
  - 6. Overview of current market and best practice examples**
- 

### 1) Introduction

This report aims to comprehensively screen the Business to Business (B2B) and Business to Customer (B2C) sectors. The information will help establish the potential for the use of bikes for deliveries and provision of services and furthermore, it will provide an overview of the current market, sectors in which bikes are already being used, and the ability of freight bikes to meet the demand.

The information contained in this report draws heavily on *Cycle Freight in London – a Scoping Study*, a report commissioned by Transport for London and published in May 2009. The background research for the study includes examples from the United States and the EU as well as the UK. This has been enhanced and updated by more recent, but much smaller reports, as well as information from partners in the CycleLogistics project.

In this document, the terms ‘cycle power’, ‘cycle delivery’, ‘cycle cargo’ and ‘cycle freight’ may imply any type of cycle used for carrying goods and delivering services.

## 2) Potential for bicycle deliveries

This section looks at the potential for delivery by bike in towns and cities, and the likelihood of increasing the number of goods and services that are already delivered by bike.

Despite the decline over the past few decades in using cycle power for delivering goods and services, it has not died out completely. In some cases, cycle powered deliveries and services are making a comeback. A combination of rising fuel prices, increased congestion, declining air quality, along with the expense and difficulty of parking motorised vehicles, make using bikes for deliveries and services cost effective and in many cases, more efficient. There is now a large range of bikes in use including cargo bikes, tricycles, trailers, as well as ordinary bicycles with baskets, boxes, panniers and the traditional cycle courier's bag. In addition, folding bikes are sometimes used in combination with trains for speedy inter-city deliveries (Outspoken Delivery and 5PL for example). Electrically assisted bikes are also used in some places, for example, La Petite Reine<sup>1</sup> (LPR) in Paris and other French cities. Gnewt<sup>2</sup> is a company in London, using LPR's specially adapted, electrically assisted bikes for last mile deliveries.

### a) 'Last mile' (final kilometre)

'Last mile' refers to the final leg of a package's journey from a transport hub to its ultimate destination. Using bikes for last mile deliveries in towns and cities is particularly attractive as they offer much greater flexibility and reliability than motorised transport, saving time and money. Moreover, the use of bikes contributes to reducing CO<sub>2</sub> emissions, noise pollution and congestion, helping create more liveable cities.

Presently, in many cities, deliveries are done in small vans and some of these could easily be transferred to bikes. The Transport for London scoping study found that there were successes in some European countries with already high

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<sup>1</sup> <http://www.lapetitereine.com/uk/index.php?PHPSESSID=cabfcd61ba9e0cfa728622286edf1c90>

<sup>2</sup> <http://gnewtcargo.co.uk/>

proportions of cycling, but a trial in London by a large logistics company had not been successful. It was felt that some changes could prevent the difficulties that company experienced, including improved payload capacity and route planning. Currently, international freight companies (TNT, FedEx and DHL) are experimenting with freight bikes for town and city centre deliveries.

### **b) Sectors using cargo bikes**

We are indebted to an unpublished thesis by Stephanie Mühlbacher (Graz, 2010)<sup>3</sup> for bringing together examples of businesses within Graz and quantifying how many different trips they could make by bicycle instead of by motorised vehicle, and what sort of cycle might be appropriate to their work.

The constraints were distance travelled and weight and volume carried. For most of the businesses investigated, a high enough proportion of trips could be made by bicycle to suggest that a change might be beneficial in terms of ease of parking, speed to destination, and fuel saving, as well as being beneficial to the planet in the shape of CO<sub>2</sub> reduction. This seemed especially true where one person used one van for deliveries or to perform a service. It was very rare that *all* trips required a van. In the case where some trips required a van, having a bicycle in addition would be a benefit.

Below is a list of some of the sectors within which cargo bikes are currently used. It is fair to assume that within most sectors there is at least *some* potential for a cycle powered solution.

#### **i) Commerce, trade and industry**

- Pharmaceutical companies use bikes to supply pharmacies with stocks
- Large organisations operating on large sites use bikes to move items from one building to another

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<sup>3</sup> Mühlbacher, Stephanie *Potential of bicycle delivery vehicles in Graz*. Unpublished thesis, FH Joanneum University of Applied Sciences. Graz, 2010.



- Organisations with different sites within a city or town (e.g. universities, municipalities, hospitals, companies, shops)
- Organisations large and small that transport items by cycle because of philosophy as well as ease. These include a small brewery, for example.

## **ii) Service sector**

- Catering services
- Butchers
- Audio visual equipment hire
- Photographers
- Chimney sweeps
- Window cleaners
- Electricians
- Painters and decorators
- Locksmiths
- Alarm systems
- Maintenance (e.g. hand fire extinguishers)
- Gardening
- Street vendors <sup>(4)</sup> (Copenhagen has numerous examples: ice creams, coffees, soup, pancakes, cocktails, sushi)
- Mobile bicycle repair and maintenance operators
- Advertising (Copenhagen has examples of people riding around on their bike with music or advertising playing to advertise their company)
- Pedicabs – used for ferrying tourists and other visitors around in areas where it is a viable option (e.g. motorised traffic is restricted; it forms part of “the tourist experience”; some users prefer to use a pedicab as it is “green” and/or fun).
- Outreach work for which an eye-catching and efficient machine is useful, including multiple youth work examples
- And for the dedicated cyclist’s final ride, a funeral service providing a tandem bicycle with a sidecar to hold a coffin

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<sup>4</sup> We noted one case where the street vending is an additional retail point for an existing store front cafe selling soup & cocktails.

### iii) Home deliveries

- Pizza delivery services (Joey's Pizza in Germany has been using cargo bikes for 10 years)<sup>5</sup>
- Meals on wheels (free meals for those who are home-bound)
- Shopping (Supermarket shoppers in Burgdorf, Switzerland have the option of their shopping being delivered to their home by bike. This has been replicated in other towns across Switzerland)<sup>6</sup>
- Newspapers

The Transport for London scoping study found that companies for whom a green image was important predominated in home deliveries. In the UK most of those were small, local businesses, but there were examples of supermarket chains which were experimenting with cycle delivery for the same image reasons.

### iv) Business to Business deliveries

This includes many of the items listed in point ii above (office equipment, printing services, etc.) and appears to be an area that is growing quickly. In this category, delivery companies that are using bikes, especially cargo bikes, are converting more clients all the time to the efficiency of choosing delivery by bicycle.

## 3) Cycle Couriers

Cycle couriers, generally cycle messengers working for small independent companies or for themselves, traditionally delivered urgent documents using messenger bags rather than freight-carrying bikes. The industry suffered, and indeed still does to an extent, with a fairly negative image, and couriers are often thought of to be reckless cyclists zipping through towns without care for other road users. The demand for cycle couriers waned with the advent of the fax machine, and then waxed again in the 1990s when increasing traffic congestion

<sup>5</sup> See [http://www.eltis.org/index.php?id=13&lang1=en&study\\_id=3212](http://www.eltis.org/index.php?id=13&lang1=en&study_id=3212)

<sup>6</sup> See [http://www.eltis.org/index.php?id=13&lang1=en&study\\_id=1353](http://www.eltis.org/index.php?id=13&lang1=en&study_id=1353)

made bikes relatively efficient. Email, and the accompanying decrease in urgent deliveries of documents, has had a more recent impact on courier services.

Despite the negative impact of technological advances there is still a demand for the services of cycle couriers (a quick internet search revealed that there are numerous individuals and companies offering cycle courier services in most major cities). There are small items that could not be delivered digitally such as corporate gifts and original artwork, and the market for original signed documents, as often demanded by the legal profession, still remains. As such, the role cycle couriers can play in moving CycleLogistics from niche to mainstream should not be underestimated. Recent research carried out on behalf of the Flemish Government by the University of Antwerp, revealed that there is enormous potential for bike couriers in Flanders<sup>7</sup> (this is mirrored across Europe). The study highlighted the industry's competitive advantage for transporting small packages which needed a quick delivery within the city. It also suggested that there was an opportunity for 'cycle couriers to professionalise by teaming up with logistics companies and to take over the first and last mile transport of batches of small time-sensitive parcels.'

#### **4) Pros and Cons of using Cycle Freight**

##### **a) Logistics and transport professionals**

The scoping study commissioned by Transport for London<sup>8</sup> explores in depth many of the issues relevant to cycle freight. The report concluded that perception is probably the biggest single factor inhibiting the use of cycle freight. However, the report also notes that for transport and logistics professionals, the reluctance to use cycle freight is due more to a lack of information around the options available rather than due to entrenched attitudes against using cycle power. While many companies profiled for the study saw possibilities in transporting goods by cycle, there was also the difficulty of changing operating methods, with a change from investment in vehicles (vans, for instance, are more expensive than

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<sup>7</sup> [http://www.eltis.org/index.php?ID1=5&id=60&news\\_id=3010](http://www.eltis.org/index.php?ID1=5&id=60&news_id=3010)

<sup>8</sup> <http://www.tfl.gov.uk/assets/downloads/businessandpartners/cycle-as-freight-may-2009.pdf>



bikes) to investment in staff (smaller payload may mean more trips and therefore more staff). Staffing costs were likely to be higher overall than motorised vehicle costs. This may be offset by fuel costs, ability to reach all areas of a city, speed, and increased market, especially due to client demand for 'green' transport.

The Transport for London report noted the pros and cons listed table below. Some points may be London specific as different cities will all have their own approaches, legal frameworks to manage motorised traffic, cycle and pedestrian traffic, parking, congestion, air quality and so on. Nevertheless, many of the points made apply to the majority of urban areas.

*Pros:*

- The capital cost of cycles is a lot lower than the motorised alternative.
- The running costs associated with bikes are considerably lower than a car or van. Fixed costs such as insurance and depreciation are typically a quarter of the cost and costs such as vehicle excise duty are usually non-existent.
- Cargo bikes aren't subject to parking costs or congestion charges (assuming they stay within the legal definition laid out by the EU). Cycles can be parked almost anywhere, and this offers considerable advantage in terms efficiency.
- Bikes are much more reliable in congested towns and cities. They are less susceptible to traffic and therefore can provide a more dependable service when compared to the motorised alternative
- There is no legal driver training requirement for people to use bikes (although some training would probably be recommended).
- The low environmental impact of bikes creates both a favourable green image for organisations that are using them, and in the case of councils providing services by bike, sets an example to private companies.
- Using bikes may improve the health of those staff involved.
- Will help towns and cities meet EU air quality directive levels

*Cons:*

- The cost of providing staff for a service is often greater than any capital cost, and in some cases more staff are needed to carry out services by bike than by van; in some cases additional staffing is simply a fear.
- Fears over security of equipment need to be addressed if we are to move cargo cycling from niche to mainstream. Municipalities use expensive equipment and will want guarantees of security.
- There is a perception that bikes have a limited payload and range, and whilst this is true to an extent, many people underestimate this and overestimate how much they move around.
- Limited storage space: cargo bikes generally need to be stored indoors and this is not always possible where space is at a premium.
- Vehicles powered by humans are subject to driver fatigue; this could lead to a less efficient service being provided or staff resistance to actually using bikes.
- Bikes are more susceptible to the weather, which may limit the seasons when bikes can be used or lead to staff resistance.

### **b) Additional barriers**

We note that access to knowledge of cargo-carrying bikes is a significant barrier to their use in some places. The CycleLogistics project aims to help with a comprehensive catalogue of machines currently available.

Safety of employees has also been raised, especially with regard to traffic conditions. This varies hugely between countries and between towns within countries. The approach to safety also varies, including legal conditions that favour bikes over motorised vehicles (including paths and other infrastructure, rights-of-way, advanced signalling, access by bikes/restriction to automobiles, and responsibility in collisions) and training for cyclists and drivers of large vehicles.

### **5) Ability of freight bikes to meet demand**

It is now possible to transport loads up to 60 kg with a two-wheeled load-carrying bike (the 8-Freight or Bakfiets, for instance). The two-wheel design makes it

exceptionally fast for a load carrying bicycle as it gets through traffic in a similar way to an ordinary bike. The Loadstar tricycle has a rear load carrier which will take loads of up to 200 kg, and the Cycle Maximus can carry up to 250kg. Other types of cargo bikes exist and more are being designed for specific purposes. This improvement in speed and load carrying may help organisations switch to use of bikes. Delivery companies are also adding cargo-carrying bikes with small electric motors to assist with heavier loads and hills; these have reached capacities of 400kg.

The daily distance bikes can travel is related to the terrain and weight they carry, as well as to the rider. Electrically-assisted cargo bikes seem to offer 20-40km per charge of their battery, with 20km the maximum for heavily-laden tricycles. The distance any company needs to travel in a day to make deliveries or provide services can be difficult to estimate. Mühlbacher, working with Karl Reiter at FGM-Amor, suggested a figure of 8km per return trip without electrical assistance and 20km with electrical assistance as reasonable for most businesses, noting a load of not more than 200kg in weight and 1.5-2 cubic meters in volume. La Petit Reine offered deliveries up to 30km, which may be more typical of a maximum for a delivery company depending on the structure of the business.

The prices for cargo bicycles and tricycles typically range from around €1500-€2500, bicycles with trailers are considerably less. All businesses we spoke with also mentioned the cost of adapting the machine to display their brand and colours, to be more secure, or to have specially-built boxes for cargo.

## **6) Overview of current market and best practice examples**

There are numerous best practice examples across Europe. Below is a list of businesses in some countries, with a range of services from logistics and transport to individual companies that have chosen to use cycle power for their deliveries and service provision.

We note home delivery of groceries in many towns in Switzerland; Urban Cab's agreement with SNFC for last-mile delivery in Paris; Austria's cycling window cleaner, as well as the examples below brought together by partners in the

CycleLogistics project. The European Cycle Logistics Federation also lists contacts for logistics companies using bikes for delivery in countries across Europe. We also note that the most successful projects in Western Europe (but not the UK) were supported by local governments, at least at inception. In Germany for example, the ‘*Ich ersetze ein Auto*’ or ‘*I Replace a Car*’ project is funded by the German Federal Ministry for the Environment as part of its Climate Initiative and aims to get stakeholder acceptance of electric cargo bikes for city logistics. Thus far it has succeeded in implementing 40 of these vehicles in to the daily routine of logistics providers in German cities. Support could also take the form of contracting services to cycling delivery companies or of funding the company because the company provided an additional service, for instance work or training to those who were unemployed or home delivery to the ill or elderly.

## **United Kingdom**

### *Cambridge*

<http://www.outspokendelivery.co.uk/> (see also  
[http://www.eltis.org/index.php?id=13&study\\_id=3015](http://www.eltis.org/index.php?id=13&study_id=3015))

### *Cardiff*

<http://www.bigbluebike.co.uk/>

### *Darlington*

<http://www.green-link.co.uk/darlington.html>

### *Edinburgh*

<http://www.prontopedalpower.co.uk/>

### *Hereford*

<http://www.herefordpedicabs.com/>

### *London*

<http://gnewtcargo.co.uk/>  
<http://www.citybikes.biz/>

[www.londoncyclecourier.com](http://www.londoncyclecourier.com)

<http://www.av2hire.com/>

*Luton*

<http://www.greenlink-luton.co.uk/>

*Nottingham*

<http://www.wegocouriers.co.uk/>

*York*

<http://www.green-link.co.uk/york.html>

## **Ireland**

<http://www.velocitycouriers.ie/>

## **Spain**

*San Sebastian*

- A government implemented cargo bike delivery service has been developed that is better suited to the narrow streets of the old town. Works mainly with the supermarket but is also open to individuals and other businesses.

[http://www.eltis.org/index.php?ID1=7&id=61&video\\_id=60](http://www.eltis.org/index.php?ID1=7&id=61&video_id=60)

*Gijon City*

- La Luna Shipping distributes parcels and other deliveries on behalf of the city council. [www.laluna.coop](http://www.laluna.coop)

## **Austria**

The Austrian post office uses many cargo bikes and electric bikes to deliver the mail and is now working towards a carbon neutral service. For more information available see [http://www.eltis.org/index.php?id=13&study\\_id=3177](http://www.eltis.org/index.php?id=13&study_id=3177)

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## **Germany**

- The city of Berlin has introduced Bentobox, a modular system designed to reduce the number of delivery trips made in the city. Visit <http://www.bentobox-berlin.de> or [http://www.eltis.org/index.php?id=13&study\\_id=3520](http://www.eltis.org/index.php?id=13&study_id=3520)
- Joey's Pizza offers emission free delivery of their pizzas

## **Denmark**

### **Goods Deliveries & Courier Services**

- Logik & Co.

- Brice Bedos
- Budstikken
- PostNord (Post Denmark)
- JP/Politikens Hus,
- Københavns Cykelbude ApS
- Bring Express Danmark
- Dansk Kurer og Transport

### **Municipal Services and Service Providers**

- Municipal workers
- The Bike Man, bicycle repair via bike
- The Green Electricians, mobile electricians
- The Royal Danish Post
- Outpatient hospital services
- Vendors (food, drinks, newspapers)

### **Private Goods Transport**

- IKEA
- Personal shopping

## **Romania**

### *Ramnicul Valcea*

Bike is equipped with refreshments such as hot dogs and corn

### *Bucharest*

#### *Coffee-Bike*

This German based company has now expanded its operation to include Romania.

The bike operates as a mobile cafe selling coffee, juices and water

### *Recicleta*

A Future Plus project that aims to collect office waste paper for recycling. The paper is transported by cargo-bikes and is unique in Romania. Business is led by people stricken by poverty, thus providing job opportunities

### *Publicicleta*

An eco-solution and unconventional mobile outdoor advertising bike that allows you to promote a company brand to tens of thousands of potential customers on the street, and where motorized vehicles are restricted, such as parks, pedestrian zones, sporting events, concerts and exhibitions, guaranteeing you maximum exposure at the lowest cost: less than 1 € / 1000 views

### *Fastius*

Fast and environmentally friendly courier service in a city with 1.5 million cars

### *Tribul*

Fast on-bike delivery in Bucharest; the “door-to-door” system is used by couriers in order to take packages from the door entrance and hand it to the receiver. The average time for a delivery is approximately 30 minutes

### *Let's bike it*

A project on two wheels which aims to support activities carried out by volunteers.

## **Belgium**

The table below lists all of the cycle courier services that were known to be active in the Flanders & Brussels regions of Belgium in 2010. It is noteworthy that of the 15 listed, four are known to be recent start ups, with 1-2 years of service.

### **Active Cycle couriers in Belgium, region served and important details <sup>9</sup>**

<b>Name</b>	<b>Region</b>	<b>Details</b>
ASX Ibeco	Antwerpen	A large logistics company that uses cycle couriers & scooters for inner city deliveries. Website: <a href="http://www.asx-ibeco.be">www.asx-ibeco.be</a>

<sup>9</sup> This table was translated by ECF from the original document in Dutch by Jochen Maes, Christa Sys, Thierry Vanelslander 2011, [Kunnen fietskoeriers een rol spelen in de Vlaamse logistieke sector?](#) (Can cycle couriers play a role in the Flemish logistics sector?)

Brussels Bike Courier	Brussel	A courier service in Brussels that works exclusively with cyclists
Corpco Urban Bike	Brussel	Part of a larger company (Corpco - Euro-Sprinters).
De fietskoerier *	Antwerpen	Active more than 10 years & cooperates with <b>Pedal BXL</b> for inter-city transport between Antwerp & Brussels. Website: <a href="http://www.defietskoerier.be">www.defietskoerier.be</a>
De fietspost *	Aalst	Recent start up.
Dioxyde de gambettes	Brussel	Recent start up.
Ecopostale**	Brussel	Recent start up. In June 2011 celebrated first year of activity. Website: <a href="http://www.ecopostale.be">www.ecopostale.be</a>
Flits	Gent	Since 1999 in Gent. Besides cycle courier service, also does biketaxi & bike rental.
Max Mobiel */**	Gent	Cycle couriers that are part of a larger social employment scheme.
New customer services (NCS) *	Brussel	Logistics company that has one cycle courier.
Pedal BXL */**	Brussel	Active for about one year. Has a connection with Pedal Barcelona/San Sebastian works with <b>De fietskoerier</b> . Website: <a href="http://www.pedalbxl.com">www.pedalbxl.com</a>
Stadskoerier	Gent	Started in 2009 in Gent. No further information found.
Veloxpress	Hasselt	Recent start up.
Vit-tes *	Leuven	Can handle international items.

Vlam Koeriers\*

Antwerpen

Website: [www.vi-tes.be](http://www.vi-tes.be)

Active in Antwerp, but  
 Belgian services also  
 possible.

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