

PILOT STATUS

WHAT HAS BEEN **DONE**. WHAT ARE THE **RESULTS**.

ACTIONS & KEY PERFORMANCE INDICATORS

During three years, bike and train companies, along with consulting firms, have developed pilot projects to better integrate mobility options in several European countries. In cases where bike parking and bike sharing services already exist, pilot projects have aimed to increase awareness of the product and encourage customers to include a bike trip in their train journey. Meanwhile, where this combination is new, the beginner pilot projects have opened bike parkings by train stations and developed the new brand and services.

Indeed, in Belgium and the United-Kingdom, BiTiBi focuses mostly on the promotion of shared bicycles Blue-bike and Bike & Go. In the Milano Area, a new bike rental system was available at the train station in Bollate during the World's fair and a new bike parking facility opened in Como in September 2015. In Barcelona Area, bike parkings in Sant Cugat and Sant Boi have been built and a rental fleet for participating companies is available. All the actions performed in each projects are listed in the following pages to offer a brief overview of the implementation of a BiTiBi project step by step. Other reports describing each pilot project in detail have been published in several languages at BiTiBi.eu.

The results of the pilots projects to date have been very positive, showing the importance of developing such services in order to attract more train passengers and to reduce ${\rm CO_2}$ emissions in Europe. Pilots projects have been monitored, with many key indicators shown in the following pages.



A CLOSER LOOK AT THE 5 BUILDING BLOCKS

BUILDING BLOCKS (BB) - THE BASICS

BB1 - Build safe, sheltered, and convenient bike parking

Location is an absolute priority. Racks and parking facilities at the wrong location won't be used.

BB2 - Offer convenient public bikes

At railway stations a B21 (back-to-one) bike rental system should be available. These systems have users return their rented bikes to the station at the end of the rental period.

BB3 - Unite the bike-train organisations

Having one integrated organisation is the best guarantee for a successful and intuitive door-to-door approach.

BB4 - Integrate payment systems of bike and rail services

Integrated payment of all rail and bicycle services adds convenience for to BiTiBi users.

BB5 - Communicate positively

Build communication strategies around the keywords: easy, fast, affordable, convenient, cool...

Detailed guidelines describing in details how to implement bike-trainbike services are available to download at <u>BiTiBi.eu</u>



Fare Integration BB4

Marketing Actions BB5

Transversal Actions

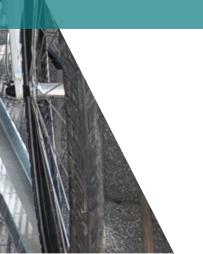
introduction of an access card compatible with the BiciBox card people currently use.



APID.
FACIL.
MODERN.
M

- General promotion of the project (roll-ups used in workshops, posters).
- Distributed of flyers to promote bike parking service & bike fleet service.
 - Organised of programming such as "Try-a-Bike days", "Cycle for free" for the staff of participating businesses, and "Bike School Day" for adults.
- Participated in promotional events.
 - Established presence and continued outreach through social media platforms.
 - Creation and distribution of a Welcome Package for Business-to-Business activities.

- Stakeholder mapping
 - Organisation of a local workshop with all stakeholders to discuss the maximization of the BiTiBi building blocks as well as a national knowledge transfer workshop.
 - Organisation of follow-up meetings to define and monitor the new BiTiBi services and infrastructure.
 - Development of a Living Lab with registered fleet users evaluating the projects through surveys.



MILAN

BOLLATE - COMO

Bicycle Parking Situation Bike Sharing Situation BB2

Organization Unity

Opened the Velostazione at the Como-Borghi station in September 2015 complete with 90 parking spots.

Launched a new bike rental system in Bollate in May 2015 during the Milano Expo.

Established a comprehensive strategy of bike-train-bike services by rail operator, FN. Introduced 10 secure bike parking facilities in the Milan area, in addition to the one in Como.

Utilised the BiTiBi brand as a unifying factor.

Created an internal bike-train-bike team inside the rail operatory, FN.















Fare Integration

Marketing Actions

Transversal Actions

Preparation of the integrating shared system by 2017.



Stakeholder mapping.

public bicycles and bike parking into the existing smart ITSO/Walrus

the second anniversary in Liverpool South Parkway train station with passengers and BiTiBi users.

Organised a local workshop with all stakeholders to discuss maximizing the BiTiBi building blocks.



Development of Business-to-Business marketing: Discount for companies, Welcome Pack. Bike & Go has been promoted at a European Employee Benefits conference in London.

Organisation of workshop follow-up meetings to discuss all developments and opportunities with regard to the B2B offer.



Improve the registration process via mobile devices.

Improved data collection to allow for customer profiling: the data will allow to segment customers based on usage and home area to make bespoke offers and suggestions to specific groups.



Development of Business-to-Customer marketing through Member-get-member schemes.

The visibility of Bike & Go has improved in the train operator network maps.

Increased Bike&Go visibility by parking a bike in a visible place on stations with an attached flag reading: "want to hire me today? ..."

Development of an on-the-spot registration tool.



BELGIUM

GHENT - LIÈGE

Bicycle Parking Situation Bike Sharing Situation BB2

Organization Unity

Bicycle parking was in place previous to project start.

Shared public bicycles (Blue-bike) were in place previous to project start. Several new stations have been opened during the project with 48 stations as of the end of 2016. The goal is to get 115 stations by 2020.

Organisation unity is already in place previous to project start. The BiTiBi brand has not been used due to the strong, pre-existing Belgian brand, Blue-bike.









AWARENESS OF BITIBI

PRECONDITIONS & AWARENESS SURVEYS

Surveys are an important source of data for monitoring the success of pilot projects.

In the intermediate pilots (Belgium and UK) two awareness surveys have been carried out with the aim of evaluating the impact of the local communication and marketing strategies, as well as determining the awareness of the BiTiBi project among, primarily, non BiTiBi users.

This survey was carried out at the beginning and at the end of the project (2014 and 2016). In the beginner pilots (Italy and Catalonia), only one awareness survey was carried out a few months after the pilots started. All surveys have been conducted in person.

AWARENESS OF EXISTING SERVICES IN THE UK

In the UK, the precondition survey showed an extremely low awareness of the BiTiBi services and the Bike & Go brand among train passengers of Southport and Liverpool South Parkway stations. During the project several actions were organised to improve the visibility of the service. From communication campaigns to events for companies and improvement of the location of the bike rentals points actions were diverse. The results have been very positive since the awareness has had an exponential increase.

Awareness of the BiTiBi services : Bike & Go and Go Cycle

%





BELGIUM

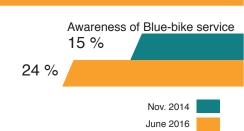
Awareness of secure bike parking at the station

52 %

45 %

AWARENESS OF EXISTING SERVICES IN WALLONIA

In Wallonia, the awareness of the BiTiBi services and of Bluebike are both increasing. In Flanders, the results of the awareness surveys are not accurate due to technical issues during the second survey and are therefore not communicated here.



ITALY

Awareness of BiTiBi possibilities

55 %

AWARENESS OF EXISTING SERVICES IN ITALY

An awareness survey have been carried out at the train stations in Bollate and Como in June 2016 showing rather good results for such a recent service.





USER OPINIONS

6%

CHEAP / EXPENSIVE

CONVENIENT / INCONVENIENT

88 °⁄

FAST SERVICE / SLOW SERVICE

EASY / DIFFICULT-TO-USE

CHEAP / EXPENSIVE 70 % 24 % 6 FAST SERVICE / SLOW SERVICE 72 % 22 % 6 EASY / DIFFICULT-TO-USE 72 % 17 % 11 % SAFE-TO-USE / UNSAFE-TO-USE 78 % 20 % CLOSE TO PLATFORM / FAR FROM... 89 % 9% 2 % EASY-TO-PAY / DIFFICULT-TO-PAY 76 % 20 % 4

Very good / Good

Bad / Very bad

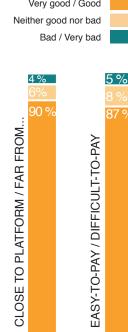
Neither good nor bad

CONVENIENT / INCONVENIENT

SATISFACTION OF USERS WITH SHARED BICYCLE SERVICES

In June 2015, in countries where 'BiTiBi services have been in place for several years - Flanders in Belgium and UK - a survey was conducted to gauge the satisfaction of the users of the shared bicycle services, Bike & Go and Blue-bike.





Flanders - Blue-bike



SAFE-TO-USE / UNSAFE TO USE

RANKING OF THE IMPORTANCE OF SEVEN COMPONENTS OF THE SHARED BICYCLE SERVICES

- 1. EASY-TO-USE
- 2. CONVENIENCE
- 3. PRICE
- LANDERS
- 4. Distance to platform

 / station
 - 5. Fast service
 - 6. Safe-to-use
 - 7. Easy to pay

- 1. CONVENIENCE
- 2. EASY TO USE
- 3. DISTANCE TO PLATFORM / STATION
- 4. Price
- 5. Safe-to-use
- 6. Fast service
- 7. Easy to pay

RANKING OF THE IMPORTANCE OF SEVEN COMPONENTS OF THE BICYCLE PARKING

- 1. CONVENIENCE
- 2. SAFE-TO-USE
- 3. DISTANCE TO PLATFORM / STATION
- 4. Price
- 5. Easy-to-use
- 6. Fast service
- 7. Easy to pay

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UNITED KINGDOM

KEY PERFORMANCE INDICATORS

Data and key performance indicators are indispensable to evaluate the behaviour changes of European citizens, the project impacts, and the energy and ${\rm CO_2}$ emissions savings.

Several users surveys were carried out during the projects. The results have been compared to the figures collected at the beginning of the project in 2014 in a precondition survey. Therefore, this evaluation measure how, in two years, the creation of bike services at train stations accompanied by communication and marketing strategies, people have changed their transportation habits.

In each pilot, the use of the parking and the bike rentals have also been monitored in order to show the evolution.

Based on data collected by train operators and based on user surveys, key performance indicators (KPI) have been calculated:

List of KPI:

- Reduction of vehicle kilometres of car and bus/tram/metro and increase of vehicle kilometres by train and bicycle
- · Savings in fuel consumption
- Savings in CO₂ emissions
- Energy savings

To read the complete report "Evaluation Report on Local Pilots and Key Performance Indicators", please visit the website <u>bitibi.eu</u> (page: Downloads, section: Monitoring & Statut Reports). All the indicators are provided, as well as the details of the calculations.

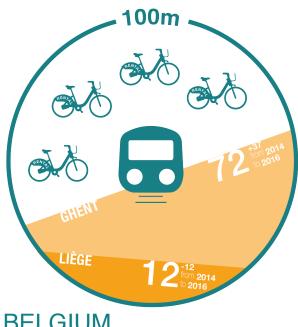
NUMBER OF RENTALS PER MONTH IN THE PILOT PROJECTS







NUMBER OF BIKE SHARING UNITS AROUND THE TRAIN STATIONS IN THE PILOT PROJECTS



BELGIUM Blue-bike





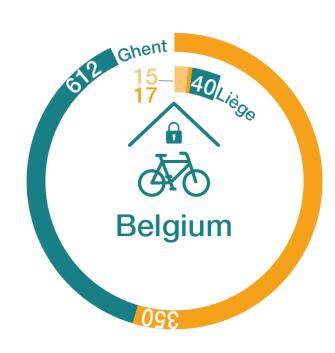




SPAIN Company fleets

BIKE PARKING AT TRAIN STATIONS IN THE PILOT PROJECTS

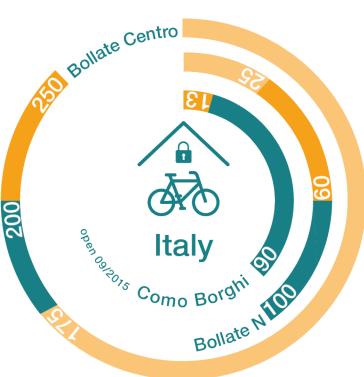








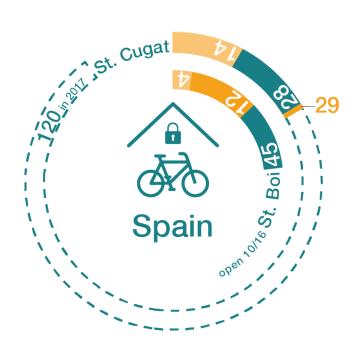
Number of parked bikes in a sheltered and safe bike parking / day in Sept. 2014.



Number of parked bikes in a sheltered and safe bike parking / day in Sept. 2016. Number of spaces in a sheltered and safe bike parking in Sept. 2016.













Non-sheltered bike parking



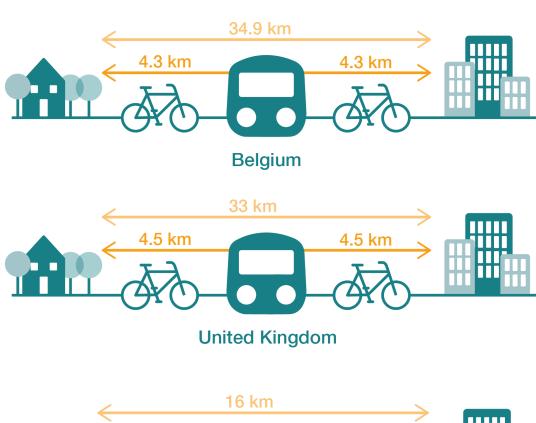
Sheltered bike parking

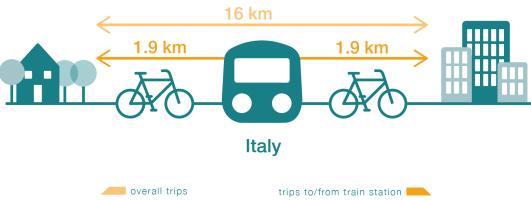


Sheltered & safe bike parking



AVERAGE DISTANCE OF TRIPS OF NEW BITIBIUSERS IN PILOT PROJECTS





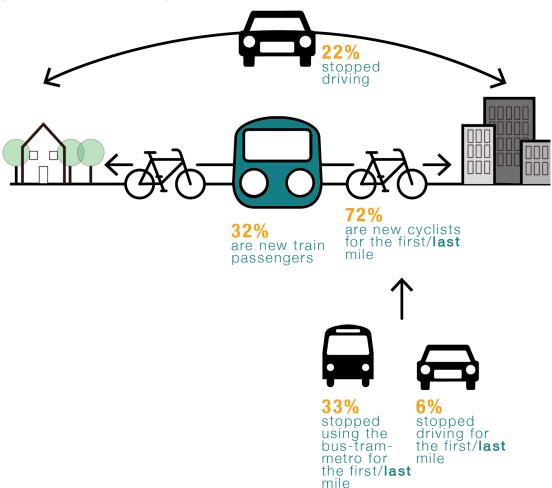


TRANSPORTATION SHIFT IN PILOT PROJECTS

BELGIUM - Here is what happens in a country where 1,300 rental bikes are available at 48 train stations over the country:

TRANSPORTATION MODAL SHIFT OF BLUE-BIKE MEMBERS, considering .
SAME TRIP

(SEPT. 2014 - JUNE 2016)



7% would have not made this trip before being a Blue-bike member.98,454 new BiTiBi trips/year.

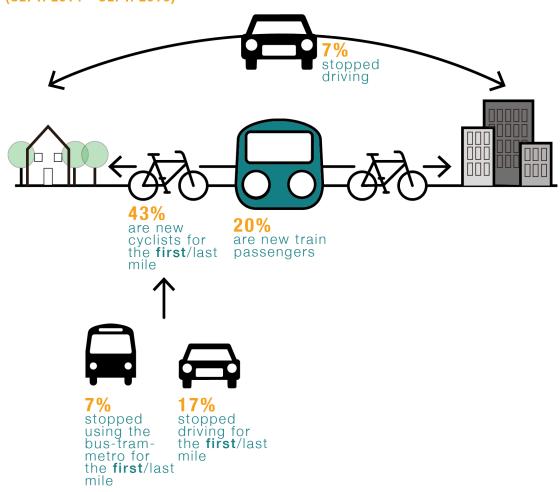
Data based on a 78-participants online survey (June 2016)

Last: in this survey most of the respondents replied about their last mile habits.

COMO & BOLLATE (ITALY) - Here is what happens in cities where safe bike parkings are available within the train station:

TRANSPORTATION MODAL SHIFT OF BIKE PARKING MEMBERS,

CONSIDERING A SAME TRIP (SEPT. 2014 - SEPT. 2016)



7% would have not made this trip before the opening of the bike parking.24,503 new BiTiBi trips/year.

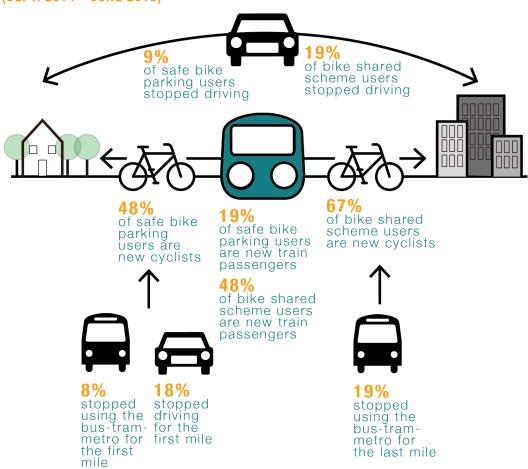
Data based on a 30-participants face-to-face survey (Sept. 2016)

First: in this survey most of the respondants replied about their first mile habit.



UNITED KINGDOM - HERE IS WHAT HAPPENS IN A COUNTRY WHERE RENTAL BIKES AND SAFE AND SHELTERED BIKE PARKINGS ARE AVAILABLE AT TRAIN STATIONS:

TRANSPORTATION MODAL SHIFT OF SECURED CYCLE SHELTERS AND BIKE & GO MEMBERS, CONSIDERING A SAME TRIP (SEPT. 2014 - JUNE 2016)



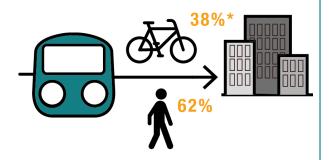
10% would have not made this trip before being a Bike & Go member or a safe bike parking user.

30,123 new BiTiBi trips/year.

Data based on a 264-participants online survey (June 2016)

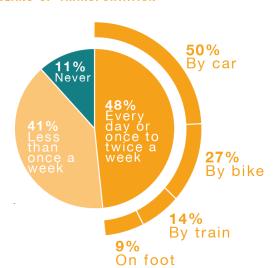
Potential User Survey in Barcelona & Mobility Habits

PUBLIC TRANSPORT USERS' HABITS LAST MILE



*personal bikes (folding bikes...)

LABOR MOBILITY NUMBERS OF TRIPS DURING WORKING HOURS & MEANS OF TRANSPORTATION



CYCLING POTENTIAL CYCLING HABITS & REQUESTS

70% owns at least one

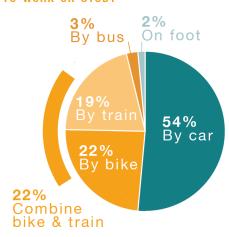


70% would try cycling to work if there would be some improvements.

The improvement actions most valued are:

- **1)** Availability of good bike parkings in the streets.
- **2)** Knowledge of a good bike route to/from the station.
- **3)** Availability of good bike parkings inside buildings.
 - 4) Possibility to test an e-bike.

MODAL SHARE OF RESPONDENTS MAIN MEANS OF TRANSPORTATION TO PLACES TO WORK OR STUDY

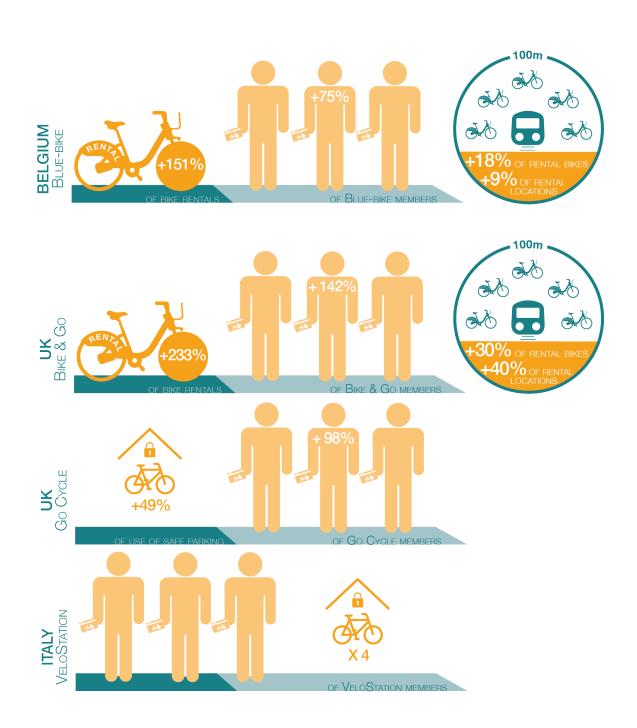


Data based on a 37-participant online survey available on BiTiBi.cat (people working or studying in Sant Boi and Sant Cugat and registered for rent of electric bicycles) (July 2016).



GLOBAL RESULATS IN THE PILOT PROJECTS (2014-2016)

2 YEARS OF INCREASE - MORE BIKE-TRAIN-BIKE SERVICES FOR EUROPEAN CITIZENS



CHANGES IN MODAL SPLIT FOR TRIPS TO/FROM TRAIN STATIONS

BELGIUM

Since choosing to commute by bike and train,

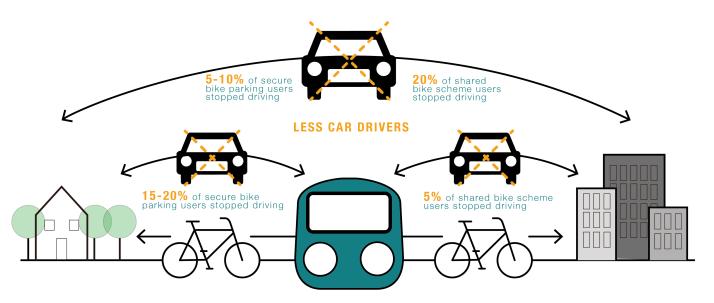
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... 65% of BiTiBi users drive their LESS
... 76% of BiTiBi users drive their MORE
... 90% of BiTiBi users continue to take the AS MUCH AS they did before
... 50% of BiTiBi users continue to take the AS MUCH AS they did before
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UNITED KINGDOM

Since choosing to commute by bike and train,

Data: User surveys, 2015

IMPACTS OF BITIBI SERVICES ON MOBILITY



MORE CYCLISTS MORE TRAIN PASSENGERS

40% to 50% of bike parking users are new cyclists

20% of safe bike parking users are new train passengers

30 to 40% of bike shared scheme users are new train passengers

MORE CYCLISTS

70% of bike shared scheme users are new cyclists

The behavioural change in car use, for the whole trip, is more important when shared bike schemes are implemented. But secure bike parking has an impact to encourage train passengers to reach the station by bike instead of by car.

ENVIRONMENTAL IMPACTS OF THE PROJECT IN PILOT COUNTRIES

These tables provide impacts on mobility and annual savings in fuel, energy, ${\rm CO_2}$ emissions in countries where projects have been conducted. Indicators are given per mode.

Calculations are based on emission factors from TREMOVE and on surveys carried out during the BiTiBi pilots.

Be	lgi	ur	n
201	4-2	201	16







Total

Impact on Mobility (pkm)	Saving in Fuel (I/km)	Saving in Energy (toe/km)	Saving in CO ₂ (t/km)
- 776,078	-43,693	-40	-132
- 273,161	-3,387	-3	-21
830,281	3,819	10	37
	-43,261	-33	-116

Impacts in Belgium

ITALY 2014-2016







Total

3	Impact on Mobility (pkm)	Saving in Fuel (I/km)	Saving in Energy (toe/km)	Saving in CO ₂ (t/km)
	-42,517	-2,394	-2	-7
	-3,893	-48	0	0
	74,993	345	1	3
		-2,097	-1	-4

Estimates for impacts in Como and Bollate

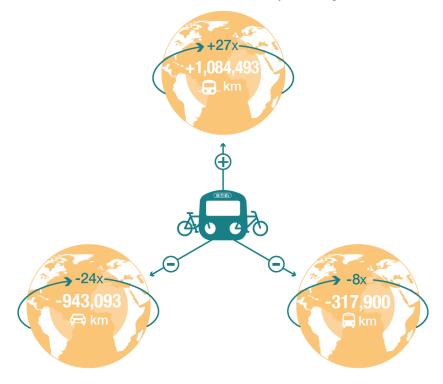


UK 2014-2016	Impact on Mobility (pkm)	Saving in Fuel (I/km)	Saving in Energy (toe/km)	Saving in CO ₂ (t/km)
	-124,499	-7,009	-6	-21
	-40,845	-506	0	-3
	179,219	824	2	8
Total		-6,691	-5	-16

Impacts in UK

GLOBAL ENVIRONMENTAL IMPACTS (2014-2016 - Belgium, Italy, UK)

Mobility shift: Number of car and bus pkm/year avoided & number of new train pkm/year



This mobility shift entails the following impacts on the environment:

52,049 liters/year of





equivalent/year of the have not been used.



136 tonnes/year of (CO₂) have not been emitted



every year.

GLOBAL FINANCIAL IMPACTS (2014-2016 - Belgium, Italy, UK)



In 2 years, the BiTiBi pilot projects in Belgium, Italy and the UK, saw an increase of 11,032 new users, meaning 159,312 new trips per year have been done combining the bike and train.



The annual impact of the BiTiBi project is a saving of 23,824 € per year because of polluants (PM10, Nox) and Co₂ emissions avoided.

If we include the cost savings related to health benefits, a total of 1,236,000 € per year have been saved in the three pilot projects area.

SCENARIO 2030 IN EUROPEAN UNION

A most ambitious scenario would be in 2030, with the expansion of BiTiBi across EU. We estimate an increase of railway passengers of 3.2% by 2030 thanks to BiTiBi projects.

Calculation assumptions

For the first mile, we assume that in all EU countries 20% of train passengers will reach the station by bike in 2030. We know from our results that those newfound passengers using the bike for the first mile, 20% are also new train passengers who previously relied on other transport modes before following the BiTiBi combination.

For the first mile, in 2030, the safe bike parking users will conduct 1,192 million new bicycle trips towards the station.

For the last mile, we assume that all the EU countries will reach the goal of Blue-bike for 2020: 500,000 rentals/year that in Belgium translates to **0.002 shared bike rentals/train passenger**. Expanded to the EU countries, in 2030 there will be **16 million of new shared bikes rentals** in train stations.

We use the results of modal shift when using BiTiBi (cf. previous graphs): Prior to combining the bike and train, 10% of respondents were completing their whole trip by car (average of 40 km) and 15% were reaching the station by car (average of 3 km).

Car and bus pkm avoided vs. new cycling and train pkm

Using our results of modal shift and average trip distances for different modes from the BiTiBi project, we calculate the car and bus pkm that will be avoided and newfound cycling and train pkm.

2030 in EU	Impact on Mobility (million pkm)	Saving in Fuel (I/km)	Saving in Energy (toe/km)	Saving in CO ₂ (t/km)
	-5,436	-306,043,123	-276,689	-923,022
	-1,832	-22,721,201	-21,439	-138,526
	6,251	28,754,406	76,262	277,543
₩	3,625			
Total		-300,009,918	-221,866	-784,005

Pollutant and emission savings

The savings in 2030 will be 53.05 tonnes of PM10 and 247.56 tonnes of NOx due to avoided car pkm incured by newfound secure bike parking facility users. What's more, 1.31 tonnes of PM10 and 6.12 tonnes of NOx due to avoided car pkm encouraged by shared bike schemes. The external costs savings are around 105,380,979 Euros for the secure bike parking and 2,604,519 Euros for shared bike schemes.

Savings related to health benefits

Regular cycling is translated into economic **health benefits as a reduction in premature deaths**. To calculate the order of magnitude, only people using the bicycle more than three times a week are taken into account. Meaning most users of shared bicycles (last mile) are not taken into consideration to calculate health benefits. The frequency of using shared bicycles is often not high enough to get a positive health impact. So we don't take into account those people who may also use a bicycle elsewhere.

Out of the new cyclists for the first mile, the number of passengers expected to die prematurely if they were not cycling regularly would be 12,020. Moreover, the number of deaths per year that are prevented by this level of cycling is 1,189, providing an estimated protective benefit of 10 % (compared to persons not cycling regularly). The value of the social health benefit is 3,076 millions euros.

Regarding the cyclists for the last mile (shared bike users), the value of the social health benefit is **84,455,000 euros.**

This cost benefit analysis is basic and does not take (fully) into account some of the social benefits, like the positive impact on congestion, the time gains for the users, etc. It likely also underestimates the health benefits as it takes only into consideration only the very regular users of shared bicycles, while for them this shared bicycle uses come probably on top of other bicycle use, increasing the physical health impact of cycling.

Investment Costs vs. Social Benefits (2030 - whole EU)

Bike parking - Bike to the station

Investment costs Social bike parking (Heat

Social Benefits (Health)



*Calculation assumpations :

200 traveling days/year; 2 trips/day; 2.98 million racks needed; 1,000 €/rack; last of a bike parking: 20 years; maintenance cost: 200€/year/rack.

Bike shared scheme - Bike from the station

Investment & maintenance costs in bike shared scheme



Social Benefits (Health & Environment)

The health & environment costs benefits for society are smaller than the annual cost of the bike sharing scheme. Shared bikes users should pay 2 euros per trip to compensate.

*Calculation assumpations:

123 annual rentals/bike; 16 million rentals in EU; 130 700 bikes needed; last of the bike: 5 years; maintenance cost of the bike system: 600€/year/bike.



BiTiBi.eu

You can follow the BiTiBi project – the pilots in Belgium, Italy, Spain, UK and the development of the Dutch model – on the BiTiBi.eu website. Get inspired by the local pilot projects and how they provide a seamless door-to-door transport connection by combining bikes and trains.

This document is a summary of delivery 4.3 - Evaluation Report of Local Pilots and delivery 4.4 - Global Evaluation.

You can read the complete documents on the www.bitibi.eu website.

