Deloitte.

Future of Mobility

A New Deal for Mobility in Belgium

2 May 2019

Introduction

What can governments, companies and citizens do to accelerate the transition to the future of mobility in Belgium?

The way we move from A to B in Belgium has to change. The most important aspect of mobility for Belgian consumers is travel time, and yet the country ranks 27th out of 28 EU countries for time spent in road congestion. While there is broad consensus on the need for change across the public and private sectors, the congestion crisis continues to worsen. Furthermore, mobility has a major societal and environmental impact. Nearly one-quarter of total carbon dioxide (CO_2) emissions come from transport, while associated air, noise and light pollution have a detrimental effect on public health, especially in our cities. Although improvements have been made in areas such as bicycle usage and the introduction of new mobility offerings, more coordinated action is required to make a substantial change in the mobility landscape.

Thankfully, the way we move from A to B is changing. Converging forces are disrupting the transport ecosystem faster than ever before, bringing unprecedented opportunities (and challenges) to actors across the public and private sectors. Focused and targeted action is required from across the extended mobility ecosystem in order to boost the transition to the Future of Mobility in Belgium.

In this report, we propose a New Deal for Mobility in Belgium. We aim to structure the conversation around sustainable mobility improvements through a three-pillar plan of action. The first pillar is about making the alternatives to the car more attractive, for example by building and promoting the use of multi-modal hubs and Mobility-as-a-Service. Secondly, we must drive a change in mobility behaviour, through focusing strategic and fiscal efforts on responsible car usage rather than car ownership. Finally, we need to enable green transportation; if people drive, they should be able to drive green, so actions to overcome high prices of electric vehicles (EVs) and fix the home charging problem are needed.

The goal is clear – accelerating the transition to the Future of Mobility in Belgium in order to (1) reduce congestion and (2) reduce environmental impact.

Future *of*
Mobility

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1. What does the Future of Mobility look like?

In 2016, Deloitte first outlined its global perspectives on the Future of Mobility [1], driven by a series of converging technological and social trends. Three years later, we continue to see five major shifts that are disrupting the Belgian mobility landscape.

The first trend is the shift **from car-centricity to user-centricity**. The car is the second most expensive item that most of us will buy, and yet it sits parked 96% of the time. Today, alternative transport options are also able to meet user needs; one out of three users of ride-hailing services (such as Uber) now question the need to own a car themselves [2]. On top of that, shared kilometres are up to a third cheaper than personal vehicle kilometres due to increased utilisation and efficiency [3], which moves us **from personally owned to shared.** We forecast that 31% of all kilometres driven will be shared by 2030 [4]. The third transformation in the Future of Mobility will be one of going **from single-mode to multi-mode**. Not taking the car every time we go from A to B will require a combination of different transport offerings. Technology has risen as a critical enabler of an integrated and smooth multi-modal experience. Today, already one in five Belgians travel in a multi-modal way at least once a week [2]. People are becoming increasingly connected, and the Internet of Things (IoT) can make the connected vehicle possible. In 2030, when 'digital natives' will represent 40% of the population, close to 100% of all vehicles will be connected [5], illustrating the shift **from physical to digital** mobility. Finally, as climate change and sustainability continue to rise on the global agenda, the shift **from fossil fuels to alternative fuels** will become more and more prevalent. Electric vehicles are the drivers of this change, as nearly 20% of all passenger cars in Belgium are forecasted to be electric by 2030 [6].

From car-centric
to user-centric

One out of three people who use ride-hailing **question** the need to **own a vehicle**

From personally-owned
to shared

31% of people kilometers in Belgium will be **shared** in 2030

From single-mode
to multi-mode

One in five Belgians travel **multimodal** at least once a week

From physical
to digital

In 2030, **40%** of the population will be '**digital natives**' and **100% of vehicles** will be **connected**

From diesel & petrol
to electric

Nearly **20%** of all passenger cars in Belgium are expected to be **electric** in 2030

2. Mobility in Belgium today: the stakes are high

Mobility is one of the most important elements of the Belgian economy. According to Traxio, the extended industry of mobility and transport represents **€147 billion**, equivalent to one-third of the Belgian GDP [7, 8]. The stakes are also high when it comes to sustainability, especially considering that 23% of total CO_2 emissions in Belgium come from transport [9].

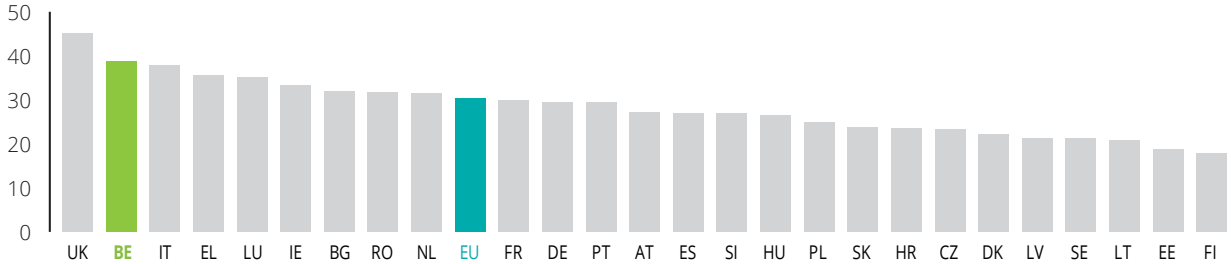
Mobility in Belgium is big, but it has to change. The impact on our **environment** is immense, as both air and noise pollution are the biggest environmental health risks in Europe and worsen with growing traffic [10]. Belgium is not fulfilling European requirements for air quality, especially in terms of nitrous oxide (NO_2), which mainly comes from transport. One-quarter of all childhood asthma cases in Belgium are caused by this NO_2 emission, one of the highest numbers globally [11, 12].

On top of this comes the heavy burden of **congestion**. Belgium's car-centric mentality has led the country to perform worse than almost all other European countries when it comes to time spent in traffic, as illustrated in Figure 1. Belgians lose more than an entire working week in congestion every year, and more than one in seven feel stressed behind the wheel [13].

As the amount of structural congestion keeps growing at a faster rate than the growth of the car park, the situation continues to worsen [15, 16].

Belgium underperforms its peers in Europe

Hours spent in road congestion annually



Customer satisfaction with rail transport (score out of 100)

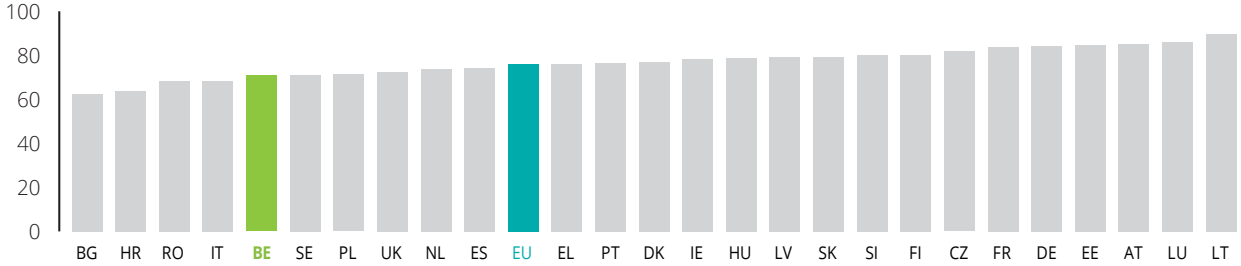


Figure 1: Hours spent in congestion annually and customer satisfaction with rail transport for European countries [13]

A New Deal for Mobility

Increase the **attractiveness of alternatives**

- Build multi-modal hubs
- Roll out Mobility-as-a-Service
- Encourage cycling

Change **mobility behaviour**

- Reform the mobility fiscal framework
- Raise awareness

If you drive, **drive green**

- Solve the home charging problem
- Level prices
- Ensure feasibility

3. A New Deal for Mobility

Focused and targeted action is required from across the extended mobility ecosystem in order to resolve the urgent environmental and congestion challenges in Belgium. In this report, we propose a 'New Deal for Mobility'. We aim to structure the conversation around sustainable mobility improvements through a three-pillar plan of action – a set of concrete measures to boost mobility in Belgium in the next three to five years[A].

3.1. Increase the attractiveness of alternatives

Today, taking the car is the default choice for many of us. For 43% of Belgian consumers, travel time is the most important aspect of mobility [2]. When considering that alternatives (going on foot, by bike or by public transport) can increase travel time by 67% in Belgium [17], it should be no surprise that so many people take the car. Furthermore, consumers also perceive the car as the clear leader in terms of reliability, ease of use, and safety; a lot of work is needed to dethrone 'King Car'.

The car will and should always remain an important part of our transport network. It brings flexibility, accessibility and independence to citizens across the world. However, we can only solve the congestion and sustainability challenges we face in Belgium if we reduce our day-to-day dependency on the car. To enable this, alternative transport options need to become more attractive, for example through building out and promoting the usage of multi-modal hubs, Mobility-as-a-Service and cycling.

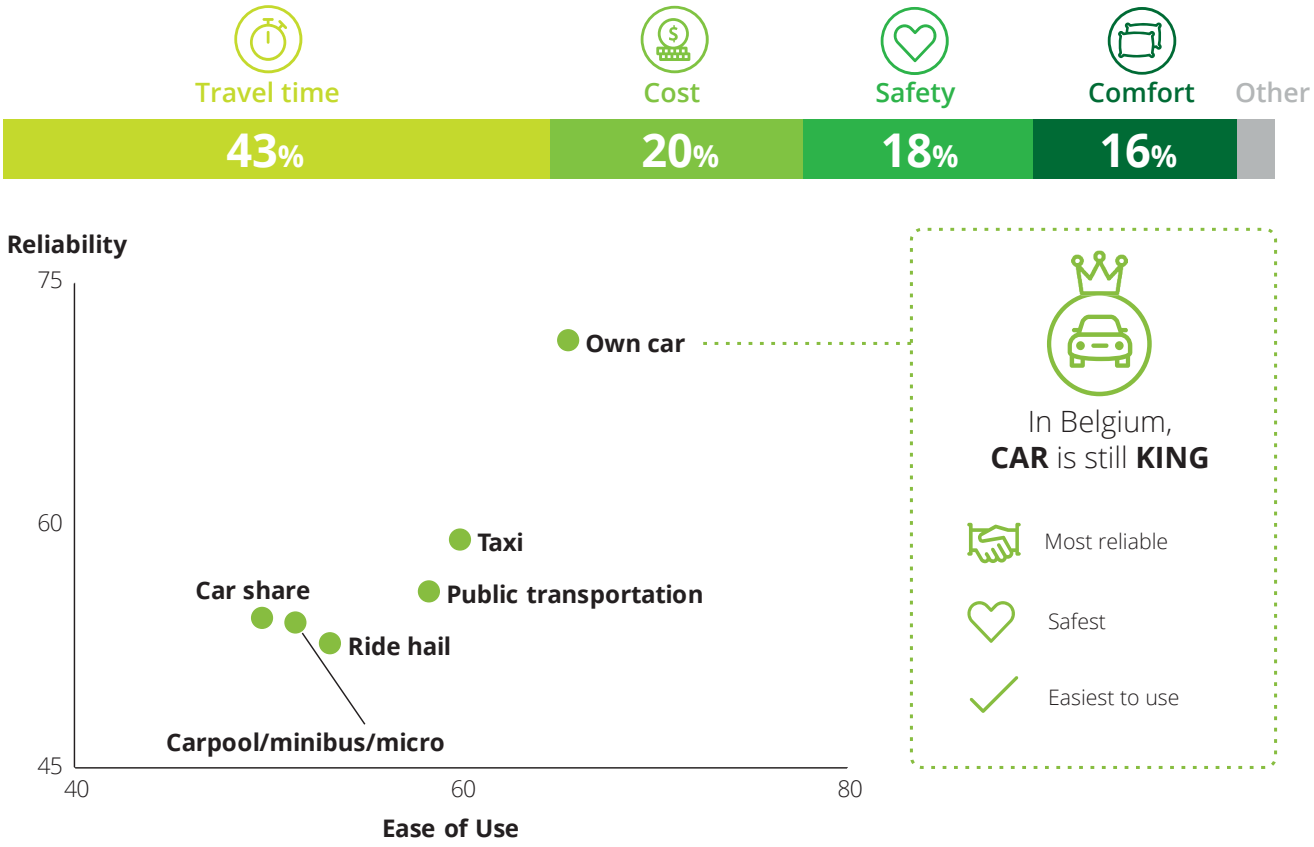


Figure 2: (Top) Belgian distribution of answers when asked: "What is the most important aspect of mobility?"; (Bottom) modes of transport mapped according to scores on reliability and ease of use; n=1,254

A. As our New Deal is focused on realising a short/mid-term transformation of personal mobility, we are deliberately omitting a discussion on the transport of goods, demographic evolutions such as urbanisation and remote-working, and the longer-term disruptive potential of technologies such as autonomous vehicles, drones, or hyperloop.

3.1.A Build multi-modal hubs

Alternative transport options should be accessible to everyone, and multi-modal hubs are a way to realise this. A multi-modal hub physically integrates transport modes and parking solutions, embedding interconnected systems with real-time travel information [18, 19].
It can be any combination of the following elements:

- **Parking for bikes / scooters / cars** (including charging points)
- **Shared bike / scooter / car systems** (e.g. Cambio, Blue Bike, carpooling, etc.)
- **Kiss and Ride zones** (e.g. for taxis, Uber, etc.)
- **Public transport** (quick access to train, bus, tram, and metro)
- **Services** (increasing attractiveness of hubs; can range from information kiosks with real-time information to WiFi, ATMs, and even grocery delivery)

Case studies from abroad show the potential impact of multi-modal hubs:

- In Bremen, 80 'mobil.punkte' have been installed, providing 300 shared cars to 14,000 users. This has not only removed 5,000 private cars from the streets but also reduced overall car usage [20].

- Amsterdam provides its 250 'hello-bike' bikes to 3,000 users, with 400 rides/day. It found that physical mobility-hubs with information pillars increased usage by 130% [21].

Multi-modal hubs should be located at strategic locations such as high-density retail and office space, and tailored to those locations' specific needs. A business park with a large concentration of employees could be an example of a strategic location, with the hub providing frequent public transport connections during peak times, electric bike charging, and package delivery services.

If we take the city of Brussels for example, where more than 350,000 Belgians commute into the city every day, the following actions should be taken:

1. Connect villages around Brussels to the network by building multi-modal hubs in the centre and connecting them with larger hubs and city centres through high quality public transport

2. Install a new attractive concept for Park and Ride (P+R) at the edge of Brussels with cheap or free parking, frequent public transport connections and dedicated bike lanes to the centre

3. Build a dense network of sustainable alternatives in Brussels (bus/tram/metro, taxi, ride-hailing, shared mobility: Villo!, Trotty, Mobit, etc.) and implement a more restrictive policy to discourage car usage (e.g. low emission zones, limited local parking spaces combined with the newly created P+R spaces, increased parking prices)

Such a multi-modal hub network in Brussels and surroundings could take up to 20,000 cars off the road [4].

Building a network of alternative mobility solutions is like creating a physical Internet. Public and private players should invest in creating tailored multi-modal hubs in all municipalities, so that alternative mobility, like the Internet, is available to all.

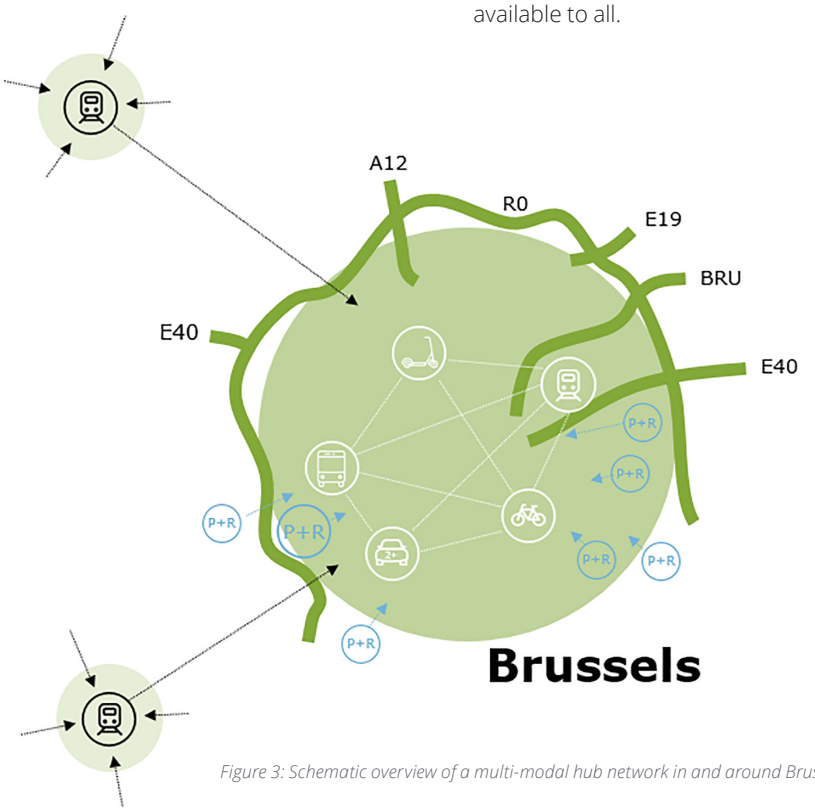


Figure 3: Schematic overview of a multi-modal hub network in and around Brusselss

3.1.B Roll out Mobility-as-a-Service

The second action to make alternative transport modes more attractive is to build and roll out Mobility-as-a-Service (MaaS) in Belgium. MaaS uses a digital platform to integrate end-to-end trip planning, booking, ticketing, and paying across all modes of transport. MaaS leverages on existing capacity in the transport network, and makes it easier for consumers to use multiple transport options, making MaaS an interesting investment and potential 'quick win'. It closely links to the multi-modal hubs, as a digital counterpart of the physical mobility network.

Looking at best practice examples from other countries, where MaaS has been a part of the mobility landscape for a longer time, gives an idea of the potential impact. Whim, one of the leading forces behind the MaaS concept, has realised a 50% drop in private car usage for its users in Helsinki [22]. In Vienna, the mobility platform 'smile' reported that 48% of its users take public transport more often and that multi-modal transport became increasingly popular [23].

Belgium has already attracted several MaaS providers in recent years, including both global leaders and innovative local start-ups. A good example is the city of Antwerp, supporting several MaaS providers to launch their applications integrating both public and private mobility solutions. More recently the city has launched a project call to help existing mobility solutions to connect with MaaS applications. In 2018 the federal ministers Bellot and De Croo launched the Smart Mobility call resulting in funding for innovative mobility solutions including MaaS offerings [24]. For example; more than one million citizens will be reached by integrating mobility solutions in the KBC banking app, Lab-Box is launching the Pikaway application, and other providers are offering open source solutions.

Deloitte has helped the Portuguese city of Cascais to establish a smart city ecosystem. To accommodate the fluctuating population and in an effort to secure a position as a world-class travel destination, the city launched MobiCascais in 2016. MobiCascais enables a user to reserve, manage, and pay for the use of every mobility-related service, including bike and car sharing, smart parking, taxis, transport on request, carpooling, electric vehicle charging, and information on public transit (bus and train) routes and stations. It connects with users through an app and a web portal. The system is an integrated platform that manages real-time information regarding all multi-modal transportation systems, and therefore also allows for management of urban logistics and traffic.

Innovation and collaboration between different players is key to realising the potential benefits MaaS can bring, with two key enablers:

1. **MaaS Standardisation:** Connecting mobility solutions with MaaS applications relies heavily on access to data and ticketing, open APIs (Application Programming Interface) and interoperability of systems. MaaS standardisation is key to ensure the high quality exchange of data in order to make a seamless digital experience possible.

2. **MaaS Business Models:** The time of traditional, isolated mobility providers is over. Public transport authorities should give access to private MaaS actors to play a role in the changing mobility ecosystem. As such, MaaS players should be able to re-sell tickets of public transport operators based on clear conditions (e.g. obligation of two-way data exchange) and agreements with public transport authorities that are no longer reluctant to the private business models of MaaS players.

As these enablers are essential when rolling out MaaS, they cannot be left up to chance. A legislative framework should be in put in place to create a level playing field for all private and public actors in a rapidly changing ecosystem.

3.1.C Invest in cycling infrastructure

Cycling is a national sport in Belgium. We should make it our national mode of transport. Not only is cycling a zero-emission alternative, but it is also good for our health, and our wallets. However, only 12% of all trips in Belgium are made by bicycle (respectively 18% in Flanders, 4% in Brussels, and 2% in Wallonia). This underutilisation of cycling is most striking when looking at the modal split per trip length (Figure 4). Even for short trips of one to two kilometres, the car is used more often than a bike (40% vs 26% respectively). Bike usage quickly drops as distances get longer, not reaching over 5% modal share for trips longer than 10 km. Although bike usage has gone up by 50% since 2001, and young people are more willing to trade their car in for a bike, there is still ample room for improvement [25].

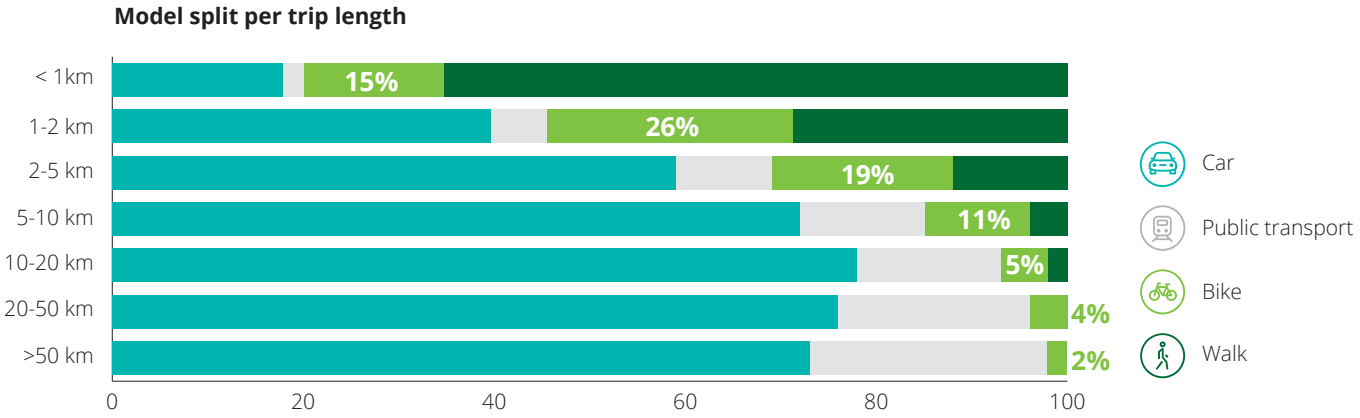


Figure 4: Modal split (% of trips) per trip length in Belgium for cars, public transport (train, metro, tram, bus), bicycle, and walking [25]

The financial returns of investing in bikes and cycling infrastructure can amount to over 20 times the initial investment [26], making it an efficient means to enact a modal shift. With that in mind, we propose three concrete measures for action.

1. **Discourage cars from coming to city centres to create safety and comfort**
   One in three citizens in Brussels do not cycle due to safety concerns [27], and even in Flanders, where millions of euro have been invested in bicycle highways, only 52% of citizens feel that it is safe to cycle [28]. Investments in better infrastructure are a key step towards safe and comfortable bike usage, but measures can and must be bolder. It is no surprise that cyclists feel unsafe when riding on the same crowded streets as cars in city centres (opening car doors is the number one reason for bicycle accidents in Brussels for example [29]). Discouraging cars from entering city centres by increasing parking prices and reducing the number of on-street parking spots is one option to ensure safe and comfortable cycling, especially when 30% of car traffic in cities consists of cars looking for parking [17]. Parking prices could increase by 25%, which would make Brussels on par with the European average [30]; the price shock would inspire citizens to make a conscious decision about whether driving to their destination is the best option. Furthermore, on-street parking in the centre should be replaced by off-street parking at multi-modal hubs on the city's edges, with extended pedestrian car-free zones. The 'Good Move' regional mobility plan being proposed in Brussels is a positive example towards extending the network of cycle routes in city centres, especially at dangerous crossings. It aims for a fourfold increase in bicycle use in the next 10 years.

2. **Ensure safe use of e-bikes and e-scooters**
   Electric scooters, docked and dockless shared bikes, and other vehicle types are shrinking the physical footprint needed to move people over relatively short distances. Collectively dubbed 'micromobility', these services have clearly resonated with consumers in Belgium, as demonstrated by their rapid adoption over just the last several months. They have the potential to better connect people with public transit, reduce reliance on private cars, and make the most of existing space by "right-sizing" the vehicle [31]. Electric power is able to supplement pedal power for longer distances and in hilly areas, and this already reflects in the popularity of the e-bike: today half of all bikes sold in Belgium are electric [32]. This increased popularity puts a moral obligation on public and private players to adequately inform and educate citizens on how to use e-bikes and e-scooters in a responsible way. Users should be aware of the correct traffic code of these new vehicle types, so they do not endanger others and themselves by driving at unsafe speeds for example. In addition, putting in place general rules of conduct, such as not parking shared e-scooters at inconvenient places, will enable sustainable growth of micromobility to complement other mobility options.

3. **Make bikes the number one choice for first and last mile trips**
   Today, 22% in Flanders uses the bike as a way to get to the train, and 6% of commuters use it as 'after-transport'. In the Netherlands, this is 47% and 12% respectively [33]. In the multi-modal hub network, the bike (or scooter) plays an important role to bridge smaller distances, as the first choice to go to and from multi-modal hubs. Investments should be further intensified to amplify our cycling infrastructure as the most cost-efficient solution to realize the modal shift. These investments need a turnaround to ensure enough safe and easy-to-find bicycle storage for private bikes free of charge, and a large availability of shared (electronic) bicycles, both managed via MaaS applications.

3.2 Change mobility behaviour

Providing an attractive network of transport alternatives is not enough to ensure that people will actually adapt their mobility behaviours. To inspire real change, we must reform the mobility fiscal framework and raise awareness of different transport options.

3.2.A Reform the mobility fiscal framework

A favourable cost-net impact ratio has made the salary car a popular part of the remuneration package in Belgium. Today, the salary car plays an important role in Belgian mobility, with the ~500k salary cars in Belgium representing 8% of all personal vehicles, but 16% of all vehicle kilometres driven [34]. Salary cars bring necessary accessibility for employees, which currently is not being delivered by public transport. Too many remote places are not yet accessible within a reasonable timeframe. Although the impact of salary cars is not positive (increased congestion, environmental impact, etc.), the alternative to the salary car probably is a personally owned car.

This assumption is evidenced by the lack of impact of the 'mobility allowance' and 'mobility budget'. The 'mobility allowance' (or 'cash for car') has had virtually no impact to date due to the complexity and the "all or nothing" character, with less than 0,1% trading in their car [35]. The 'mobility budget', effective since April 2019, is a first step in the right direction to realizing a modal shift, by offering another alternative to salary cars. The aim is not to move away from a salary car, but rather to go for a 'greener' and 'cheaper' car (or no car) and use the saving for alternative modes of transportation or a cash pay-out. However, it should be noted that this solution is only available to a subset of the ~500k salary cars in Belgium, and poses an administrative ordeal. It appears to be unlikely that the government ambition to target 30,000 to 60,000 salary cars will be achieved based on actions to date. Therefore, additional measures are needed to realize the modal shift for salary car users in a realistic way. Furthermore, it is essential to realise that changing the fiscal framework for salary cars only affects 8% of all cars in Belgium (~500k). We urge government to aim higher by optimising the fiscal framework for the broader segment of 5.5 million cars of all employees in Belgium.

Learn more on the latest tax measures and legislation in Belgium:

The plan is two-fold. First, we recommend policy makers and employers to introduce the "responsible mileage" principle for all salary car owners. We abandon the current unlimited usage of salary cars and make users responsible for their own usage with the aim to reduce the number of vehicle kilometres by 10% and to accelerate the shift to greener cars. The current fiscal framework, which only taxes ownership of the car, is rearranged in both an ownership and usage tax, introducing the 'polluter pays' principle. This usage tax will be lower for people using less fuel, and higher for the ones using more fuel, thus encouraging efficient driving and less car kilometres. In the longer term, the push for green salary cars should be introduced as well, by increasing the usage tax for gasoline and diesel, compared to electric and other alternative fuels.

	Ownership tax	Usage tax
Today	☑☑	
Short-term Ownership to usage	☑	☑
Long-term 'Greening' the salary cars	☑	• Increasing for gasoline/diesel • Decreasing for green fuels

Secondly, we would expand the objectives of the mobility budget for salary car users to all employees in Belgium. A new "Mobility budget for all" will provide alternative modes of transportation to all employees in order to move away from their personal car. This new "Mobility budget for all" solution could for example be offered to employees as an alternative to a salary increase, or added to the remuneration package at moment of promotion. Government can introduce fiscal advantages to increase the use of this new offering. This public cost will be compensated by the benefits of better achieving the modal shift objectives of government. Government has to rethink its own revenue strategy, taking into account all these existing and additional measures, but also the decreasing revenues from excise duties due to the growth of greener cars. This is an opportunity to further simplify and harmonize the current abundance of fiscal frameworks and agreements.

A critical success factor for all the existing and new measures is that the alternative modes of transport must represent a reliable and easy to use option that enables the consumer to get to their destination as quickly as possible. This can be realised through simultaneous government and private initiatives described in the first pillar of our New Deal, supported by an increased revenue stream for public transport operators by transporting more customers.

3.2.B Raise awareness

Research in behavioural economics and social psychology has revealed deep and consistent biases that can lead to suboptimal choices, including when it comes to our own personal mobility. Just because a new technology offers benefits "on paper" does not mean consumers will ultimately embrace it. This is especially true when moving away from something as deeply ingrained in our individual and collective consciousness as the car [36]. Concretely, these cognitive biases mean that people have a strong preference for what they already own (i.e. "I already have a car"), as well as the status quo (i.e. "I am used to using a car"). These factors explain why people are sometimes resistant to changing their behaviour towards new mobility offerings, even if they are rationally better. To inspire citizens to make different mobility choices and not defaulting to using the car, government and business leaders should take the lead.

Governments and mobility providers can drive this behavioural change by raising awareness towards the public of different transport choices (and their respective benefits). For example the aforementioned Smart Mobility call, launched by the federal ministers Bellot & De Croo in 2018, which resulted in funding for initiatives such as the smart city dashboard of Waylay (Ghent, Antwerp, Brussels), Flow Bikes incentivizing citizens to start cycling via gamification or Hytchers using existing car flows of commuters to transport your packages [24]. Another example is the highly visible slimnaarantwerpen.be. Solutions can be as simple as they are effective. A campaign in Colorado, US to raise awareness on zipper merging[B] caused a 50% decrease in waiting lines. Considering one quarter of Belgians do not know how to apply the zipper principle, such actions can be quick wins at reducing congestion, even for citizens still keen to stay in their cars [37].

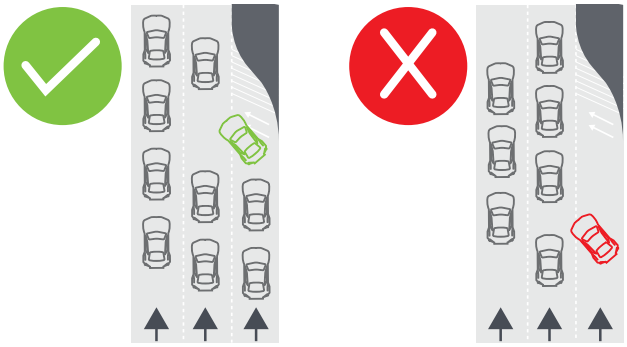


Figure 5: Principle of zipper merging [38]

Business leaders are in a prime position to drive change too, through the mobility policies and solutions they offer towards their own employees. Even before any transformative fiscal changes, new flexible B2B solutions are already available for companies in Belgium (e.g. Olympus, Modalizy, MyMove, and many more). These can enable business leaders to offer attractive multi-modal transport options to their employees as part of their talent proposition. Effective role modelling by CEOs and the management team, coupled with a strong communication and engagement strategy, can inspire employees to use these alternatives.

3.3 If you drive, drive green

It is clear that the car will continue to play an important role in personal mobility in Belgium. Yet, to make the future of mobility sustainable and mitigate the impact on the environment, a shift to greener fuels will be necessary. Some initiatives to boost green driving already exist. A good example is the Low Emission Zone (LEZ) that the cities of Antwerp and Brussels introduced in 2017 and 2018 respectively, while the city of Ghent has announced it will follow suit in 2020.

In the longer term, it is likely that alternative sources such as Hydrogen could power our vehicles. In the short to mid-term, the frontrunner in green transportation is electric vehicles. An individual switching from a conventional combustion engine powered car to an electric car reduces their personal CO2 footprint by 67%. Public Transport providers in Belgium have also recognised this shift: De Lijn and TEC combined have invested in over 700 electric and hybrid electric buses [40, 41], while MIVB/STIB has committed to having an entirely electric fleet by 2030 [42].

As at the end of 2018, there were approximately 45,000 electric cars on the road, including both battery electric vehicles (BEV) and plug-in hybrid vehicles (PHEV) [43]. While this represents less than 1% of the Belgian car park, it is clear that we are at an inflection point. Consumer demand is high, with 1 out of 3 Belgians planning to buy an electric vehicle next [2]. There is also growing and diversifying supply, as automotive manufacturers have committed to ambitious goals, bringing 200+ new EV models on the market in the next decade [44]. Deloitte's baseline forecast is for there to be about 1.2 million electric vehicles in Belgium by 2030, representing approximately 20% of the car park [6]. This forecast assumes that global resource constraints in mining, specifically related to the availability of raw materials in current battery technology, are overcome. There are also local barriers to be overcome before this electric future is realised. Four out of five Belgians consider 'range anxiety' (limited driving range and charging infrastructure) and the price premium of an electric vehicle as their greatest concerns [45].

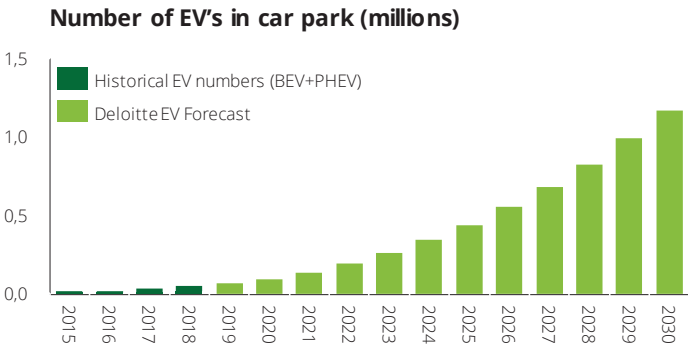


Figure 6: Deloitte Forecast for number of EVs (BEV+PHEV) in Belgian car park. Forecast made based on European Alternative Fuels Observatory (EAFO) analysis

B 'Ritsen' or 'la tirette'

3.3.A Solve the home charging problem

Some nuance is needed in the discussion on range anxiety. Driving ranges of electric vehicles are increasing rapidly, reaching today up to 300 and even 400 kilometres on a single charge. Rationally, there should not be a problem when we compare this to an average daily commute of 42 km, or even a roundtrip Brussels-Antwerp of 90 km. However, while the charging infrastructure debate often focuses on the public charging points (PCPs), the vast majority of EV charging in Belgium happens at home (Figure). While Belgium is underperforming compared to its peers with six PCPs per 100 EVs (compared to 25 in the Netherlands, 13 in France and 12 in Germany, and a recommended EAFO minimum of 10), Belgium is actually achieving higher relative EV sales than France and Germany [43]. Investing in PCPs is not necessarily therefore the biggest priority.

Home charging, on the other hand, does require action. In Belgium, over one in four homes are apartments, and in Brussels for example only 52% of residents own a private parking spot [46]. Therefore, EVs miss an enormous potential market because home charging infrastructure is not feasible.

The private home charging challenge is a tough nut to crack. The best solution is a shift in charging behaviour towards office or public charging. Additional public charging points are thus not about quantity, as discussed before, but about installing them at strategic locations (including multi-modal hubs), where there is a shortage of private parking and home charging is not an option.

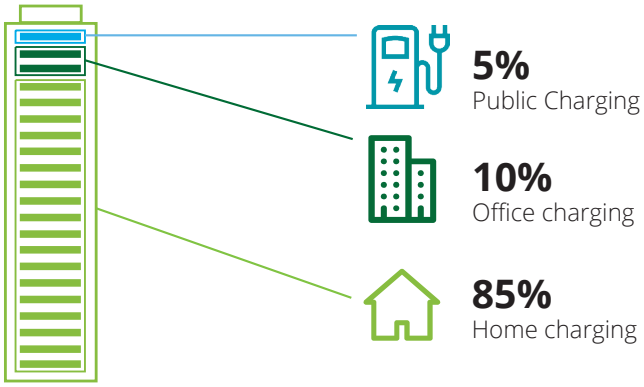
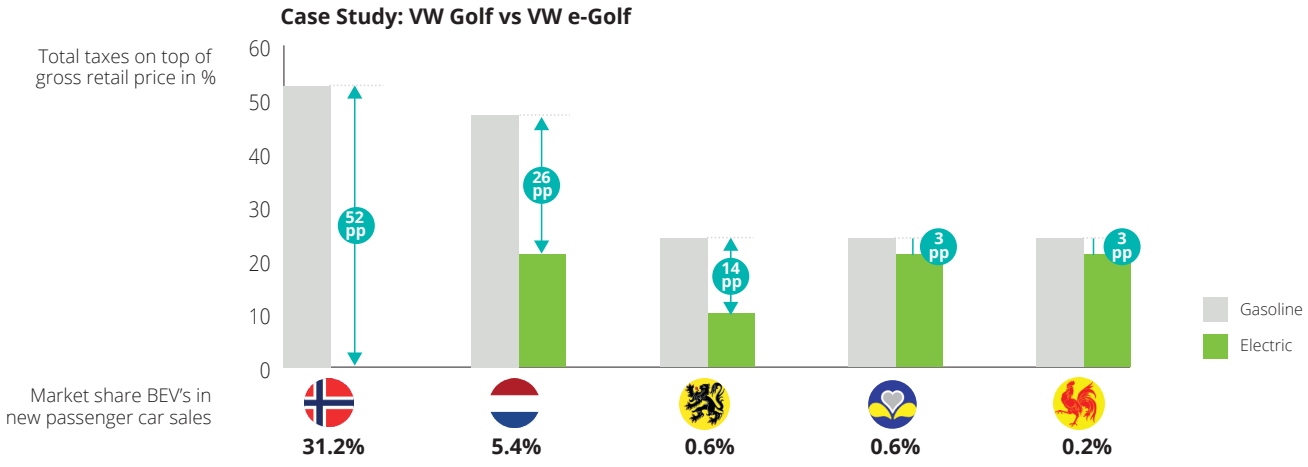


Figure 7: Distribution of Electric Vehicle charging in Belgium [48]

3.3.B Level prices

The second biggest barrier to EV adoption is the price premium of electric vehicles. While positive fiscal incentives for electric vehicles are in place across Brussels, Flanders, and Wallonia, a case study on the VW Golf vs the VW e-Golf shows that these incentives are significantly below peers such as Norway and the Netherlands. In these countries, a larger difference in the total tax paid on top of the gross vehicle price corresponds to a higher adoption rate for EVs (see Figure 8).

In order to stimulate demand, government should increase the fiscal attractiveness of electric cars compared to traditional cars. The answer in the long term might not be in a tax reduction, as the cost of this model would rise steeply with growing EV sales and quickly become unsustainable. Government needs to develop a new sustainable revenue strategy, potentially including increasing taxes on gasoline and diesel vehicles, while taxes for green alternatives remain stable.



Note: Included taxes are VAT, purchase taxes or variants, yearly road taxes or variants and grants for 4 years of usage; Sources: Deloitte VW Golf case study; Febiac

Figure 8: Case study of the total taxes on top of the gross retail price (%) for the VW Golf (green) and the VW e-Golf (grey); Indicated below is the BEV market share in new passenger car sales [4]; pp is percentage point

3.3.C Ensure feasibility

The expected rapid growth of electric vehicles raises significant challenges and questions towards government and power & utilities companies in particular. The growing electric car park is expected to drive a 4.5% increase in electricity consumption in Europe by 2030, and even 13.1% by 2050 [48]. In this context, a key challenge for the power & utilities ecosystem across Belgium will be regarding peak management. Today, we are already seeing notable peaks in electricity demand during the early evening period. If everyone returns home at the end of the day and starts charging their electric car at the same time, the burden on the grid will only grow. To achieve this future scenario of more than one million EVs, there is the risk that billions of euro of investments will be needed in grid infrastructure in Belgium.

Conclusion

A New Deal for Mobility in Belgium

Mobility touches every one of us every single day. It affects the way we get to work and go to the shops. It influences the health of our environment and of each of us as individuals. The Future of Mobility in Belgium offers us the opportunity to reduce our dependency on cars and make tangible improvements towards solving our urgent congestion and sustainability problems.

In order to realise this future, we need a New Deal for Mobility in Belgium. This New Deal aims to structure the conversation around offering better mobility options, inspiring behaviour change, and enabling greener transport. One stakeholder alone cannot deliver the Future of Mobility, and many questions remain open. Co-ordinated effort from across the mobility ecosystem is required to make tangible improvements. We ask for:

- **The government** to invest in creating a network that will make multi-modal travel accessible and attractive to everyone, and stimulate a shift in mobility behaviour through updating its fiscal incentives.
- **Mobility providers** to collaborate with other providers, both public and private, to enable an integrated journey from A to B for all travellers.
- **Business Leaders** to provide employees with different mobility options beyond the traditional salary car, and raise awareness of these alternatives.
- **Citizens** to challenge themselves to stop using the car as the default choice, and make conscious choices about mobility.

The scorecard below shows where we stand today. Let us aim for a better score tomorrow.

Modal split

74% of km by car
5% of km by bike

* FOD/SPF Mobility and Transport

Hours in congestion

39 hours

*TomTom

Emissions from transport

26,390 $ktCO_2$ eq

* FOD/SPF Mobility and Transport

Consumer adoption of new mobility modes

14% uses alternatives frequently

*Deloitte GACS

Number of multimodal hubs

8 in Flanders
5 in Wallonia

*Mobipunt Vlaanderen, Gouvernement Wallon

EV car park

0.8% of car park
BEV or PHEV

*EAFO, Febiac

References

1. **Deloitte.** *Forces of Change: The Future of Mobility. 2017.*
2. **Deloitte.** *Global Automotive Consumer Survey . 2019.*
3. **Deloitte.** *The future of mobility - How transportation technology and social trends are creating a new business ecosystem. 2015.*
4. **Deloitte Belgium**. *Internal Analysis: Future of Mobility. 2019.*
5. **Deloitte**. *The future of the automotive value chain - 2025 and beyond. 2017.*
6. **Deloitte Belgium**. *Internal analysis (based on the EAFO forecast: The transition to a Zero Emission Vehicles fleet for cars in the EU by 2050 [2017]; Febiac [2017], EVs are defined as BEVs and PHEVs). 2019.*
7. **Traxio**. *Who are we? 2019.*
8. **OECD**. *Belgium. 2019.*
9. **FOD/SPF Mobility and Transport Belgium**. *Core numbers of mobility 2017. 2018.*
10. **European Commission** - *Environment. Health effects of noise. 2016.*
11. **European Commission**. *November infringements - Commission calls on BELGIUM to comply with the EU legislation on air quality. 2018.*
12. **Achakulwisut, Pattanun , et al**. *Global, national, and urban burdens of paediatric asthma incidence attributable to ambient NO2 pollution: estimates from global datasets. s.l. : The Lancet Planetary Health, 2019.*
13. **Vias Institute**. *Press Statement - Survey European drivers la Fondation Vinci Autoroutes. 2019.*
14. **European Commission**. *Mobility and Transport - EU Transport Scoreboard. 2017.*
15. **Touring Mobilis**. *Belgians are spending more and more time in congestions outside peak hours. 2018.*
16. **Febiac**. *Annual Report. 2018.*
17. **De Tijd**. *The congestion report. 2019.*
18. **Interreg North Sea Region, et al**. *Mobipunten - Manual for muncipalities. 2018.*
19. **BUUR and The New Drive**. *Flemish vision on mobipoints. 2019.*
20. **Schreier , Hannes, et al**. *Analysis of the impacts of car-sharing in Bremen, Germany. s.l. : Interreg North Sea Region Programme , 2018.*
21. **Mobipunt**. *Hello-Bike in Amsterdam. 2018.*
22. **Hietanen, Sampo**. *Mobility as a Service - The End of Car Ownership?*
23. **Smart City Wien**. *The Mobility Platform of the Future. 2015.*
24. **Smart Mobility Belgium**. *www.smartmobilitybelgium.be. 2019.*
25. **FOD/SPF Mobility and Transport Belgium**. *First results of the Monitor-survey on Belgian's mobility. 2019.*
26. **European Commission**. *Cycling infrastructure: financial returns can be over 20 times the initial investment. s.l. : Science for Environment Policy, 2014.*
27. **Pro Velo**. *New cyclers in Brussels: who are they? What drives them? 2017.*
28. **Flemish Government**. *Muncipality- and city monitor. 2016.*
29. **Belgian Institute for Traffic Safety, (now VIAS Institute)**. *Opening doors number 1 cause of cycle accidents. s.l. : Brussels Mobility, 2017.*
30. **Euronews**. *Euronews Special Report - The cost of parking across Europe. 2016.*
31. **Deloitte**. *Small is beautiful: Making micromobility work for citizens, cities, and service providers. 2019.*
32. **Velofolies.** *Annual survey of Belgian bike handlers . 2018.*
33. **Fietsberaad.** *CyclingDNA. s.l. : Flemish Government, 2018.*
34. **FOD/SPF Mobility and Transport Belgium**. *Kilometers done by Belgian vehicles. 2018.*
35. **Acerta**. *Cash for Car? 2018.*
36. **Deloitte**. *Framing the future of mobility - Using behavioral economics to accelerate consumer adoption. 2017.*
37. **VIAS Institute**. *Zipper Merging Survey. 2016.*
38. **Flanders Agency Roads & Traffic**. *This is how zipper merging works. 2019.*
39. **De Lijn.** *Record order green buses. 2018.*
40. **TEC**. *The TEC Group purchases 298 hybrid buses. 2017.*
41. **MIVB/STIB**. *Greening of the Brussels bus fleet. 2018.*
42. **European Alternative Fuels Observatory (EAFO)**. *Vehicles and fleet / Infrastructure. 2019.*
43. **International Energy Agency (iea)**. *Global EV Outlook 2018. 2018.*
44. **Deloitte**. *New market. New entrants. New challenges. - Battery Electric Vehicles. 2019.*
45. **Flemish Confederation Construction**. *Rise of apartments. 2019.*
46. **European Environment Agency**. *Electric vehicles and the energy sector - impacts on Europe's future emissions (the 13.1% assumes a 80% EV share in 2050). 2016.*
47. **Federal Planning Agency.** *The fiscal advantage for company cars has a large influence on the mobility behaviour, causing considerable societal costs. 2016.*
48. **Eneco**. *6 reasons for electric company cars. 2018.*

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