Speed Pedelec White Paper August 2022

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Speed Pedelec White Paper July 2022

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1) Introduction

Electric cycles with pedal assistance up to 45 km/h, so-called speed pedelecs, deserve a privileged space in modern, sustainable transport.

They offer a specific but large group of commuters an outstanding solution for their daily trip to and from work. They ensure a punctual commute that provides riders with fun and healthy exercise. They are low-cost and cost-saving, energy-efficient and energy-saving and undeniably environmentally friendly. DLR has calculated that a major shift away from internal combustion engine (ICE) and electric cars to substantially lighter electric vehicles such as speed pedelecs may result in a massive reduction of Green House Gas (GHG) emissions.

And yet, the speed pedelec is treated unfairly. The EU has trapped the vehicle in inaccurate, inadequate, expensive technical legislation. Member states have failed to accommodate speed pedelecs adequately in their traffic code, therewith pushing the riders into unsafe and uncomfortable riding conditions. This is deterring many potential speed pedelec users, keeping many of them in their cars.

There are only a few exceptions to this rule in Europe. Switzerland has a much more adequate type-approval and speed pedelecs are allowed to use cycle paths. Since 2018, speed pedelecs are also allowed on cycle paths in Denmark. Belgium has welcomed the speed pedelec into its traffic code with open arms. Moreover, the speed pedelec enjoys unparalleled fiscal and financial advantages in Belgium. The legal encouragement results in a continuously growing peloton of speed pedelec riders who swap their car for this environmentally friendly, sustainable means of transport. Belgium is the living proof of the fact that policy makers play a crucial role in creating (or not) an opportunity for speed pedelecs to become a sustainable means of transport.

2) What is a speed pedelec?

A speed pedelec is a vehicle with pedals, two wheels and an assisting electric motor that only works when the cyclist is pedalling. When the cyclist stops or brakes, the motor stops. The motor assists up to a maximum speed of 45 km/h. The motor may legally have a maximum continuous rated power of 4 kW but, has typically no more than 1 kW.

The term speed pedelec does not exist in law in the EU, except in the Belgian traffic code (see point 5.a). It is rather a term used in the light, electric vehicle trade and in communication with consumers.

3) Speed pedelecs are subject to harmonized technical legislation

All electric cycles are subject to technical legislation, which is harmonized at EU-level through Regulation 168/2013 on the approval and market surveillance of two- or three-wheel vehicles and quadricycles. This Regulation defines the L-category, an assembly of vehicles ranging from powered cycles and mopeds in L1 up to microcars in L7.

The only exception to electric cycles being subject to Regulation 168/2013 concerns electric cycles with an electric motor that assists up to 25 km/h and a maximum continuous rated power of 250 W. These vehicles are excluded from Regulation 168/2013 following Article 2.2(h)[1].

As a result of this exclusion, all Member States have given these cycles the same status as conventional bicycles. Consequently, they enjoy the same favourable terms of use as conventional bicycles. They are subject to the same traffic rules, riders do not have to wear a helmet, vehicles don't need registration or motor vehicle insurance and in most Member States there is no age limit.

Member States have not granted electric cycles, which are subject to Regulation 168/2013, the same favourable terms of use as conventional bicycles, the only exception being Belgium (see point 5). Instead, Member States have rather imposed the terms of use for mopeds. This is the case for speed pedelecs, which in Regulation 168/2013, are effectively part of category L1e-B "mopeds".

This moped categorisation was not a conscious and well-informed decision on the part of the legislators. In 2010, when drafting Regulation 168/2013 was initiated, the legislators failed to see that, by only excluding electric cycles up to 25 km/h and 250W, all other types of electric cycles to be developed and put on the market in the future, would become part of the L-category and the corresponding type-approval process.

This moped-categorization of speed pedelecs causes many serious problems, which obstruct the market development of the vehicles. The European harmonized technical legislation has been mainly developed for mopeds and motorcycles with internal combustion engines and is therefore in many aspects not relevant, accurate and appropriate for speed pedelecs[2]. Furthermore, the type-approval procedure is extremely complicated, expensive and therefore a major legal hurdle in the development of the speed pedelec market. Regulation 168/2013 only sets out harmonized technical rules and holds no obligations for Member States as to the traffic code rules, which they should apply to these vehicles. Unfortunately, to date very few Member States make a distinction between traditional mopeds and speed pedelecs in their traffic code. This results in very discouraging and sometimes downright dangerous riding conditions for speed pedelecs.

In 2021, the European Commission's DG Grow has commissioned a study from TRL into so-called "Personal Mobility Devices" (PMDs), a term which also includes speed pedelecs. TRL concluded that dedicated technical legislation for PMDs, including speed pedelecs, "*would provide the flexibility necessary to support*

[1] "*This Regulation does not apply to (h) pedal cycles with pedal assistance which are equipped with an auxiliary electric motor having a maximum continuous rated power of less than or equal to 250 W, where the output of the motor is cut off when the cyclist stops pedalling and is otherwise progressively reduced and finally cut off before the vehicle speed reaches 25 km/h;*"

[2] The worst example in this framework is the WMTC 3 test that on 1 January 2020 became applicable to cycles designed to pedal in L1e. This test has been typically designed to monitor the fuel consumption and related emissions of ICE-vehicles, a non-existing issue for electric vehicles. It was impossible to question the relevance of this test for electric vehicles. For the sake of technology neutrality, electric vehicles had to be made subject to the test, full stop. Consequently, speed pedelec manufacturers are forced to put their vehicle through a test which is useless, and thus a waste of time and money.

innovation in this rapidly evolving sector, while maintaining technical standards and road safety." With that TRL effectively confirmed to the Commission that the current technical legislation is not a suitable framework for speed pedelecs.

Unfortunately, to date, the Commission has not yet followed up on TRL's recommendations. In the meantime, LEVA-EU has submitted to the Commission a constructive proposal to develop a relevant, accurate and appropriate legal framework for Light Electric Vehicles (LEVs) up to 50 km, including speed pedelecs[3].

4) Speed pedelec terms of use

Whereas technical legislation for speed pedelecs has been harmonized at EU level, the terms of use for these vehicles remain a national competence. Member States must decide on traffic code rules, helmet obligations, registration and insurance, age limit, etc.

The vast majority of Member States have paid no particular attention to specific terms of use for speed pedelecs and have therefore subjected them to the same terms as mopeds. As a result, they are subject to traffic rules for mopeds, riders must wear a moped helmet, the vehicle must be registered and insured as a motor vehicle.

The categorization of speed pedelecs as mopeds in national traffic codes creates a real and present danger for the riders. Quite a number of speed pedelecs are equipped with a motor which does not allow for a cruising speed of 40 to 42 km/h, but rather for 30 to 35 km/h[4]. If the traffic code pushes mopeds, thus also speed pedelecs on the road rather than on cycle paths, the riding conditions for speed pedelecs become very dangerous and uncomfortable. Speed pedelec riders are forced to share the road with cars, vans, and trucks, which are much heavier and much faster than they are. It is common knowledge that heavy and light vehicles can only move safely together if they are subject to similar speeds. If that cannot be achieved, light vehicles should have access to separate road infrastructure. A speed pedelec that can only achieve a cruising speed of 30 to 35 km/h cannot travel safely on a 50km/h road. This is the main factor that deters people from using speed pedelecs.

5) The Belgian case

a. Belgian traffic code

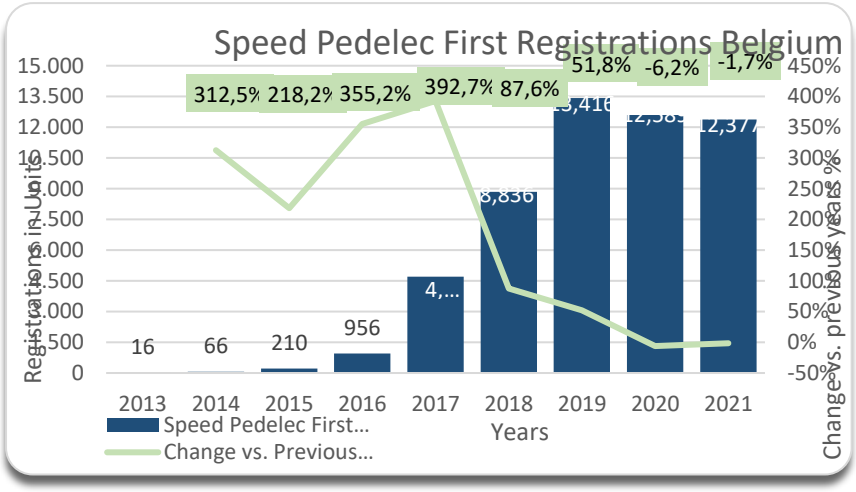
Belgium is the only EU Member State that has made a distinction between conventional mopeds and speed pedelecs in its traffic code. In fact, the guiding principle of the Belgian traffic code is the fact that all road users may only be put together if they are able to travel at similar speeds. For speed pedelecs, this means that if the speed limit on the road is 30 km/h, the speed pedelec rider may choose to use either the road or the cycle path. If the speed limit on the road is 50 km/h or higher, the speed pedelec rider **MUST** use the cycle path. This rule ensures a safe and comfortable use of speed pedelecs. This is one of the main reasons

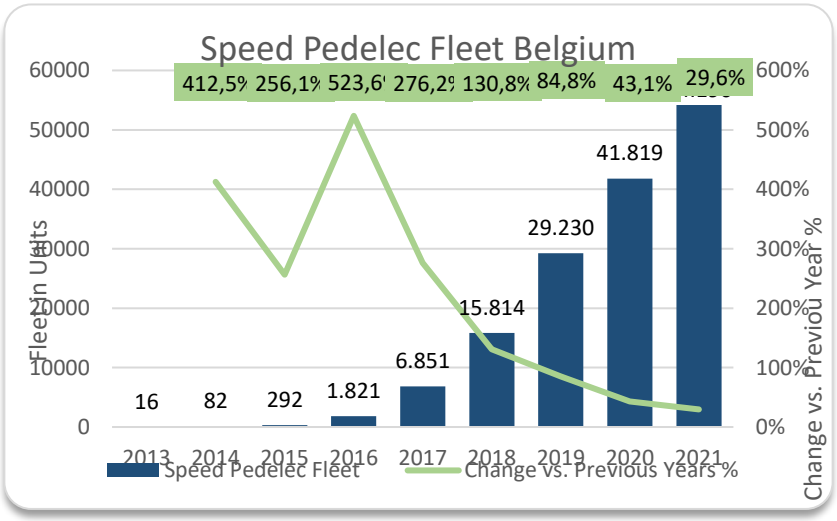
[3] LEVA-EU Position Review Type-Approval

[4] This has been established in 365SNEL, a project subsidized by the Flemish Ministry for the Environment, aimed at assessing the potential of speed pedelecs for commuting. Further information on speed pedelec speeds is in the paper "*Analysis of initial speed pedelec usage for commuting purposes in Flanders*", https://doi.org/10.1016/j.trip.2022.100589

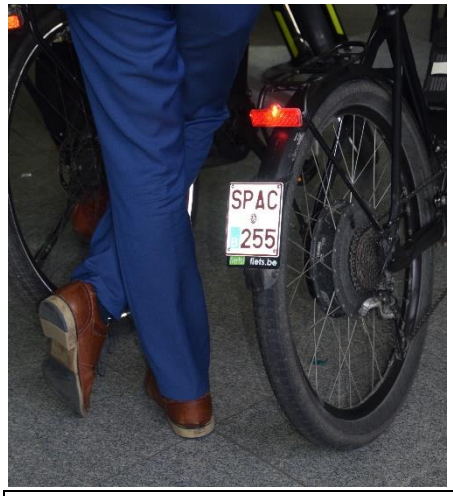
for the success of speed pedelecs in Belgium, the only EU Member State where speed pedelec sales have been growing steadily.

In 2020 and 2021, there were small dips, mainly due to the COVID-crisis. Shops were closed for longer periods. Speed Pedelecs are typically bought from shops, not from the Internet. The first half of 2022 shows a full recovery. Between 1 January and 30th June, a total of 7,566 speed pedelecs have been registered compared to 6,266 registrations in the same period last year. That is an increase of more than 17% and almost 22% better than in the first six months of 2019.

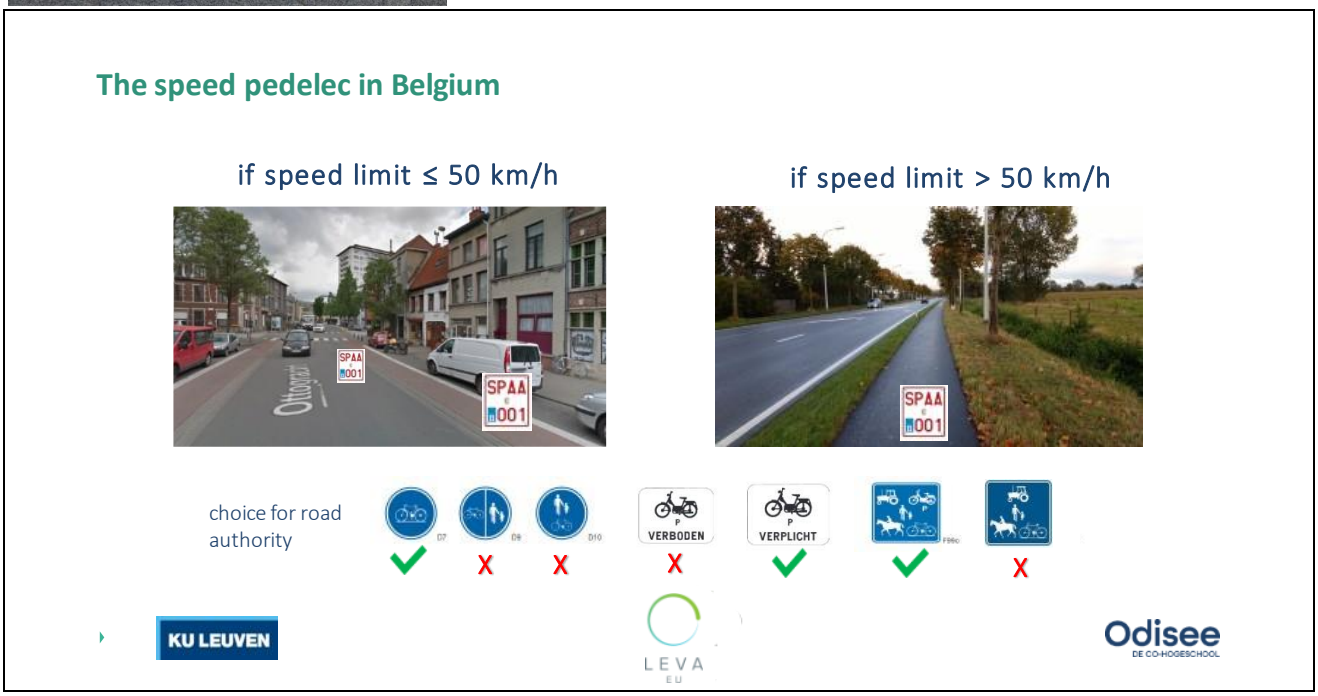




In 2016, Belgium has amended its traffic code in the following way. There was a moped category, subdivided in Class A for mopeds up to 25 km/h and Class B for mopeds up to 45 km/h. Specifically for speed pedelecs a



third class, named “speed pedelecs” was introduced with its own numberplate[5]. Mopeds Class A and Class B have numberplates starting with A or B respectively. Speed pedelecs numberplates start with P and have smaller dimensions than the moped numberplates. This separate category in the traffic code, made it possible to develop specific traffic rules for speed pedelecs as well as specific traffic signs. The general principle is to impose the use of cycle paths if the speed limit is 50 km/h or more on the road. If the limit on the road is lower, the speed pedelec rider may choose. However, road management authorities have the right not to allow speed pedelecs on certain infrastructure if they believe there may be a risk for other road users, i.e. conventional (e)cyclists and pedestrians.



Furthermore, in general speed pedelecs are subject to the same traffic rules as (e)cyclists. Speed pedelec riders are usually allowed to ride both ways in one-way streets, to use the front lane for cyclists at traffic lights, to ride in cycling streets but only at 30 km/h.

The Belgian civil servant who was at the basis of this “Belgian model” is Karel Hofman who works for the Belgian Ministry for Mobility and Transport.

[5] 1976101105 | Regelgeving | Wegcode – Point 2.17.3

Karel Hofman is open to exchanging experience with colleagues from other Member States, his email address is karel.hofman@mobilit.fgov.be.

Belgian fiscal/financial incentives

Next to this favourable traffic code, Belgium has more incentives to encourage the use of speed pedelecs for commuting. The fiscal/financial incentives are as follows:

- Companies may buy and donate a company speed pedelec to their employees for commuting. This may even be combined with a company car. The speed pedelec is 100% tax deductible. Furthermore, the company may finance all speed pedelec costs and accessories such as maintenance, repairs, battery replacement, pump, clothing, ... as well as deduct the full amount from its taxes. The same goes for providing parking and dressing rooms with or without showers.
- Employees must pay for so-called benefits in kind if they use their company car for private purposes. Speed pedelecs are exempted from this rule, even if they use their vehicle for private purposes.
- Companies may award their employees who use a speed pedelec for commuting with a cycling allowance of maximum € 0.25 per kilometre. The company may deduct the allowance from its taxes. The employee is exempted from tax and social security on the allowance.

A quick calculation to illustrate this benefit:

Mileage allowance: € 0.25/km
Distance home to work: 30 km both ways
Number of working days per year: (on average) 220 days
Total: (30 km x 220 days) x € 0.25/km = € 1,650 net

The purchase price of a speed pedelec is higher than the price of a conventional electric cycle. That is due to the fact that a speed pedelec is technologically more advanced, the vehicle requires a battery with more capacity and because it has to comply with very complex (therefore expensive) technical rules. That is why a growing number of people prefer to lease a speed pedelec through their employer, rather than purchasing one. A small amount is deducted from their monthly net salary and at the end of the leasing period they can buy the speed pedelec off the leasing company. They pay a monthly rent which may include additional services such as maintenance, anti-theft insurance, 24/7 assistance, ... The main benefit for the employer, next to the fact that he ensures sustainable mobility for his employees, is that the whole leasing operation is fully tax deductible.

Speed pedelec leasing is part of a Belgian policy for flexible remuneration through so-called cafeteria-plans. Companies can offer their employees different types of fringe benefits, which they co-finance with a small part of their net wages.

In 2021, of the 12,377 speed pedelecs that came on the Belgian market, 49.4% was through private purchase, 15% as company bikes and 35.6% through leasing. Throughout the years, the trend has been for the share of private purchase and company bikes to reduce and for leasing to increase. Belgium has a considerable number of speed pedelec leasing providers such as KBC, Cyclis, O2O, Cyclobility, etc.

Benefits of leasing a speed pedelec:

3 years' leasing contract for speed pedelec at € 3,700 (VAT included)
Employer's monthly leasing fee = € 155
€ 77.5 per month deducted from net salary employee
After 3 years employee buys speed pedelec for € 592
Total cost for employer = ((36 x €77.5) = € 2,790 fully tax deductible
Total cost for the employee = ((36 x €77.5) + € 592 = € 3,382
Employee travels 30 km per working day for 3 years at € 0.25/km = € 4,950
Net profit = € 1,568

Some Stromer Speed Pedelec Riders' Data

Average commuting distance: 27.4 km
Average commuting distance Belgian riders: 32.5 km
Total distance per year: B: 5,000 km – NL: 4,500 – D: 3,000
Stromers used for commuting: B: 90% - NL: 88% - D: 82%
Stromers used 4/5 times a week for commuting: D: 67% - B: 61% - NL: 49%

6) Speed pedelec benefits

The classic bicycle is very suitable for shorter distances, but only convinces a limited part of the population. The addition of electric propulsion enables the cyclist to maintain a constant speed with less effort, despite physical condition, inclines, distances, wind, rain and snow. Research shows that cycles with electric motors create new opportunities, above all for people who would otherwise not consider riding a conventional bike.

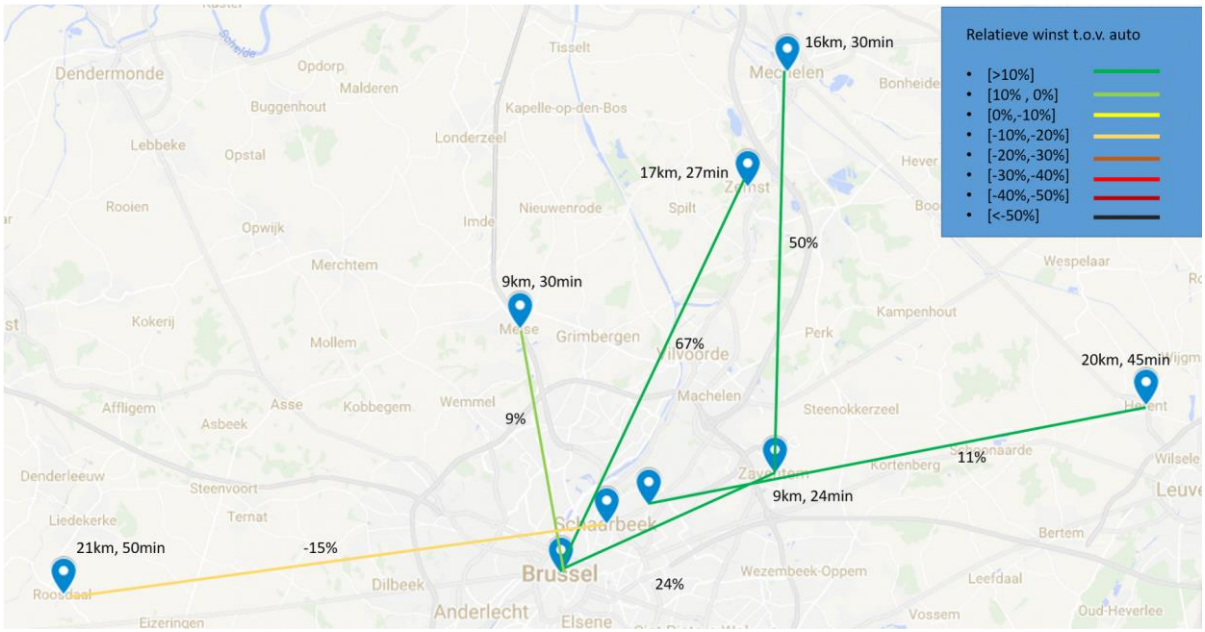
The conventional electric cycle 25 km/h and 250W has now reached the "*late majority*" stage, while the speed pedelec is in the "*early adopters*"' phase. The bicycle with pedal assistance up to 45 km/h may cause quite a bit of controversy, but it has sufficient qualities to develop into an excellent means of commuting.

a. Efficient

The number of commuters using a speed pedelec is increasing in Flanders, Belgium. These are mostly people who live too far from their work to use a 25 km/h e-bike. Research by KU Leuven shows that the 25 km/h cyclists ride on average 41 minutes per day compared to 51 minutes for the speed pedelec, since used for longer distances. Car drivers spend on average almost an hour on their daily commute.[6]

[6] Het potentieel van lichte elektrische voertuigen in Vlaanderen, p. 58

The efficiency of speed pedelecs is mainly due to their punctuality. Speed pedelec riders never get stuck in



traffic jams and know exactly when they will arrive. There is not always a time advantage compared to travelling by car or public transport. If a commuter has a very good road or public transport connection to work, the speed pedelec will usually not be faster. But for speed pedelec riders the decisive factor to choose the speed pedelec is that they never stand still in traffic and that they enjoy the ride!

b. Cost-saving

The total cost for owning and using a speed pedelec was calculated by the VUB in a study on the potential of Light Electric Vehicles in Flanders on behalf of the Flemish Environment Ministry. The costs for speed pedelecs were significantly lower than for electric cars. The cost varied between 9 and 15 cents per km, whereas cars ended up at 29 to 33 cents. If one swaps a car for a speed pedelec, there are obviously further savings to be had through the much lower purchase/leasing price of the speed pedelec as well as savings on fuel costs, insurance and taxes.[7]

The external costs/benefits due to shifts in means of transport were not included in the above-mentioned VUB calculation. As cars are swapped for speed pedelecs, the costs of infrastructure, road safety, health care, air pollution, etc. will decrease.

c. Healthy

A major advantage of the electric bike, including the speed pedelec, is that it allows to maintain a healthy speed with less effort. This feature creates the impression that riding an electric bike almost goes automatically and cannot be considered physical exertion.

[7] See https://www.stromerbike.com/en/stromerriders-carlos

By now there is sufficient evidence from research that regular use of an electric bike has a positive effect on the health of the rider. The biggest health gains may be achieved by car drivers who exchange their sedentary commuting behaviour for electric biking.

Electric biking is a form of active transport and is a simple way to integrate physical activity into our daily activities without having to add extra time to our daily agenda. Moreover, it has been established that the comfort of electric biking encourages more frequent cycling over longer distances.

d. Safe(?)

It is a fact that (electric) cyclists are more vulnerable than other road users. It is to be expected that, as the number of speed pedelec users increases, the absolute number of accidents will also increase. However, two important facts must be considered.

The "Safety in Numbers" phenomenon is now scientifically widely accepted: as the use of (e)cycles increases, the roads become safer for cyclists[8]. In addition, scientific research has so far not allowed to conclude that electric cycles are more dangerous than bicycles without a motor, nor that there would be relatively more accidents. Nevertheless, the physical damage from accidents with electric cycles often appears to be more severe. This can be logically explained by higher speeds.

It also appears that infrastructure, especially the lack of it, is a crucial element in the safety debate. There is a clear and present need for modern/modernized, high-quality and safe infrastructure to accommodate a growing diversity of LEVs, including speed pedelecs. Furthermore, there is a clear and present need for rethinking existing road infrastructure in view of a safer cohabitation between light and heavy vehicles.

In a report published end of 2021 by the Swiss Federal Council[9], the following is noted about the safety of speed pedelecs: "*These vehicles, as motorised bicycles, are almost equal to bicycles and must use the cycling infrastructure. This special Swiss regulation makes fast e-bikes attractive to users and has supported their use in recent years. Due to the differences in speed, various parties are calling for a separation between fast e-bikes and conventional (e)bikes. This unease about fast e-bikes cannot be justified by the accident statistics. So far, hardly any accidents can be attributed to the shared use of traffic areas with conventional bicycles or pedestrians. Prohibiting fast e-bikes from using cycle paths and cycle lanes – like the rules in the EU, where these vehicles are considered small motorbikes, would probably meet with little acceptance in Switzerland due to their widespread use. Although a compulsory higher-grade driving licence and associated training could make sense from a safety point of view, it would significantly reduce access to this category and therefore also considerably reduce the development of the category (in EU countries, fast e-bikes play only a marginal role). This would also have consequences for the Swiss manufacturing companies. From the Federal Council's point of view, the benefits of the traffic potential of fast e-bikes outweighs the risks associated with the use of cycling infrastructure. As long as the accident statistics do not show any need for action, access to*

[8] One paper as an example: Safety in numbers: more walkers and bicyclists, safer walking and bicycling

[9] Verkehrsflächen für den Langsamverkehr - Bericht des Bundesrates in Erfüllung der Postulate 18.4291 Burkart vom 14. Dezember 2018 und 15.4038 Candinas vom 25. September 2015. The original German text quoted in English here is on page 25.

and use of e-bikes with pedal assistance up to 45 km/h should not be restricted compared to the current regulation. In particular, fast e-bikes should continue to be allowed to use most of the cycling infrastructure."

e. Environmentally friendly

The DLR-study, "*The Potential of Light Electric Vehicles for Climate Protection through Substitution for Passenger Car Trips - Germany as a Case Study*" commissioned by LEVA-EU and co-sponsored by Stromer, models a scenario for Germany in 2030 in which a major modal shift, away from full-sized cars to LEVs, has taken place[10]. For the model, DLR has used 9 different LEV-types, among which a speed pedelec. The analysis was done with vehicles available on the market, announced for sale in 2022 or tested in pilot projects. For the model, DLR used statistical data from the German 2017-survey "Mobilität in Deutschland".

For each substitutable car trip, DLR chose the lightest LEV that could replace the car, considering a variety of factors such as luggage, passengers, trip length etc. Of all car trips in the survey, 97% were less than 100 km, with 80% under 20 km! The calculation of the overall $CO2_{eq}$ emission saving per trip was aggregated for all trips and scaled up to a period of one year for Germany.

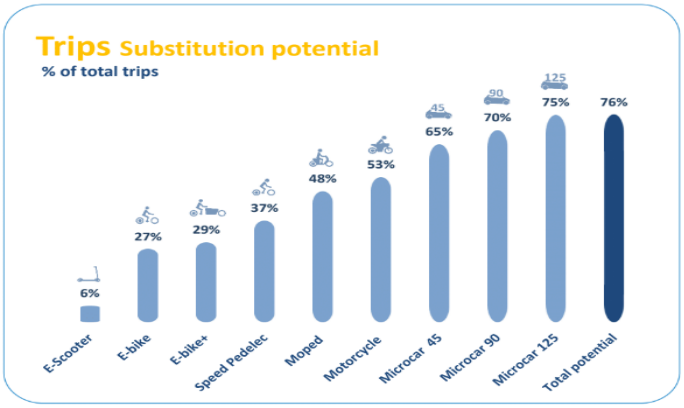
With this model, DLR found the following for speed pedelecs:

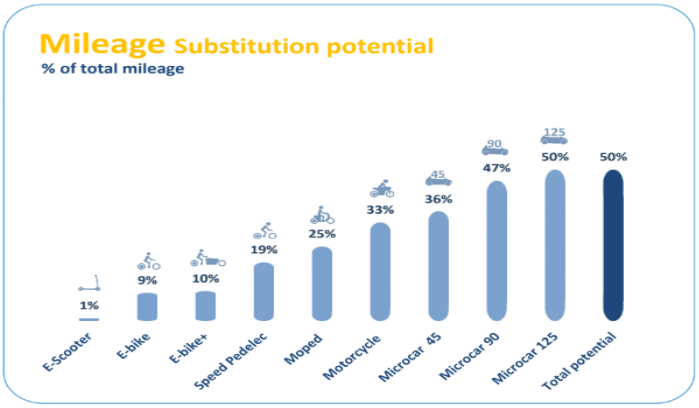
- Speed pedelecs could replace 37% of total car trips and 19% of total car mileage
- Speed pedelec production emissions are around 350 kg $CO2_{eg}$ compared to 11,000 to 14,000 kg $CO2_{eg}$ for a battery-electric mid-size passenger car.
- E-scooters and electric (cargo)cycles, including speed pedelecs would save 19% of GHG emission produced by car trips in Germany. This equals a saving of 10.83 million tonnes of $CO2_{eg}$ per year.

[10] A summary of the report is in the DLR-press release here: "*More than 40% less emissions through LEVs*"

Results: Substitution Potential (% of Possible Trips and Mileage)

Identification of the potential maximum substitution share by LEV category: How many car trips can be substituted e.g. with an E-bike+? Analysis of all reported trips shows that 76 % car trips could be substituted by LEVs.





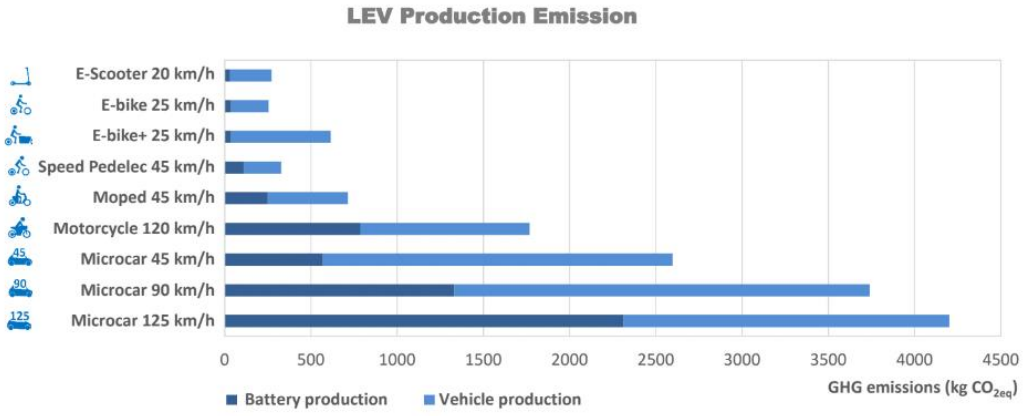
Read: For example, a Microcar 125 vehicle (max. speed 125 km/h) could in theory be used to undertake 75 % of motorised trips. In effect therefore, given it has broadly the greatest capabilities of all LEVs, this almost equals the maximum absolute substitution potential.

DLR

DLR Final Report.pdf ☆

Results: Emissions resulting from LEV Production

- Battery size and capacity is a decisive factor for the overall greenhouse gas (GHG) emissions
- High performance LEVs reach the emission level of small passenger cars



For comparison: the production of a battery-electric mid-size passenger car generates around 11 000 - 14 000 kg*

* Reference vehicle: e-Golf and VW ID.3 – VW 2021

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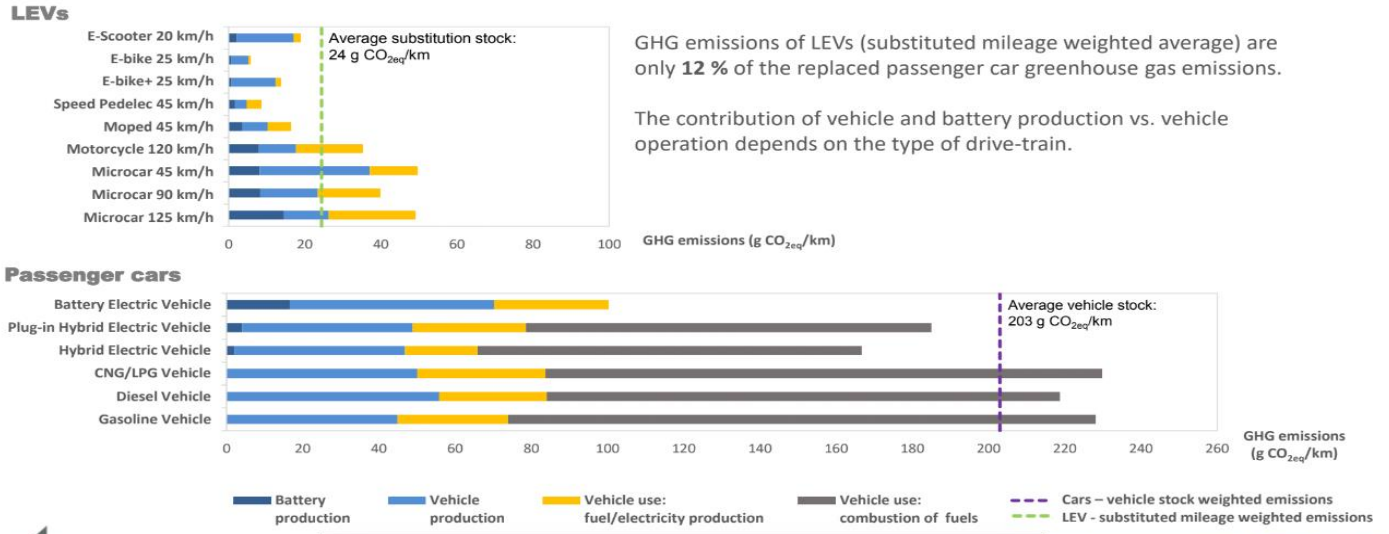
Results: Life Cycle Emissions per Kilometer



GHG emissions of LEVs (substituted mileage weighted average) are only **12 %** of the replaced passenger car greenhouse gas emissions.

The contribution of vehicle and battery production vs. vehicle operation depends on the type of drive-train.

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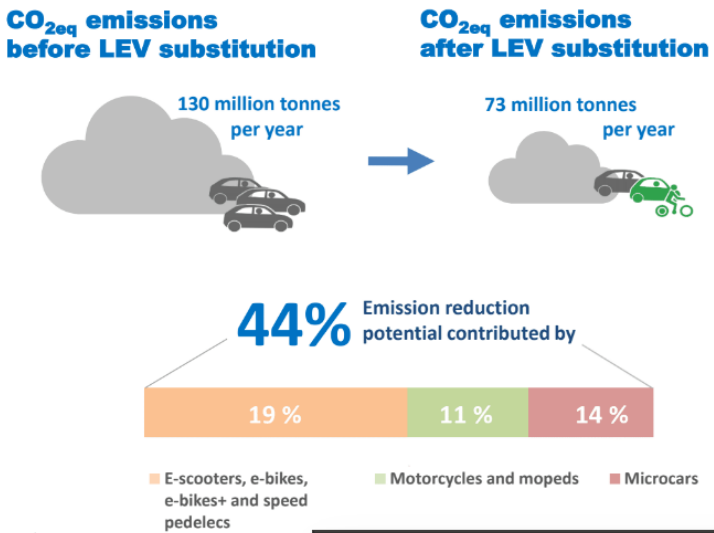
Results: Emission Reduction Potential by LEV Substitution



- Overall saving for baseline scenario is **44%** of entire passenger car emissions before substitution
- Achieved with **50 %** of mileage substitution

In absolute numbers:

- 157 kilo tonnes CO_{2eq} per day reduced from 356 kilo tonnes CO_{2eq} per day without substitution
- This is equivalent to a reduction of 57 Mio tonnes CO_{2eq} per year

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7) How to encourage speed pedelec uptake and use?

Following the DLR-research, LEVA-EU has developed the following LEV-Manifesto, which includes speed pedelecs and which, in the meantime, has been underwritten by several scientists[11]. The Manifesto summarizes the most important measures that decision-makers at both EU, national and regional level need to take to encourage the uptake and use of speed pedelecs as sustainable means of transport.

1. The DLR-report shows that worldwide increased uptake and use of Light Electric Vehicles (LEVs) to substitute the use of large, heavy vehicles can **reduce GHG emissions** very significantly and therefore contribute very significantly to tackling climate change.

2. In policies developed at all levels of government, LEVs should be dealt with as a **separate vehicle category**, which requires its own specific rules.
3. To achieve increased uptake and use of LEV to substitute the use of large, heavy vehicles **legal bottlenecks** hampering technological and market development of LEVs should be identified and removed rapidly.
4. Production of LEVs requires significantly **less critical raw materials**. Increased uptake and use of LEVs to substitute use of large, heavy vehicles can reduce the use of and demand for those materials.
5. Production and use of LEVs require significantly **less energy**. Increased uptake and use of LEVs to substitute the use of large, heavy vehicles can reduce energy-demand and energy-use. This will in turn positively affect energy-safety and -security and reduce energy-dependency.
6. A substitution of use of large, heavy vehicles by LEV-use will additionally have a significant positive effect on **congestion, road safety, noise pollution, external traffic costs, public health** and as a result on **general well-being**.
7. Worldwide increased uptake and use of LEVs to **substitute** the use of large, heavy vehicles can reduce **waste** significantly and therefore also waste processing efforts.

[11] List of LEV-Manifesto signatories:

- Frauke Behrendt, Associate Professor, Industrial Engineering and Innovation Sciences, Technology, Innovation & Society, Eindhoven University of Technology (NL)
- Jan Cappelle, Associate Professor, Faculty of Engineering Technology, KU Leuven (B)
- Christopher Cherry, Professor, Department of Civil and Environmental Engineering, University of Tennessee (USA)
- Laura Po, Associate Professor, "Enzo Ferrari" Engineering Department, UNIMORE (I)
- Bram Rotthier, Head of Department Energy Technology, Odisee University (B)
- Stephan A. Schmid, Head of Department, German Aerospace Center (DLR) (D)

8. Governments at all levels should mandate in **public tenders** relating to transport/mobility solutions, the requirement of offering the vehicle with the lowest life cycle emissions per kilometre possible, suitable for the job.
9. Governments at all levels should strongly **incentivise** the principle of using the vehicle with the lowest life cycle emissions per kilometre possible, **facilitate** safe use of LEVs on public roads and raise awareness on their effectiveness.
10. To achieve the full potential of LEVs, **more LEV-research** is required. Governments should reserve funds for answering fundamental LEV-questions and implementing pilot projects.

8)What can decision-makers in the EU do for speed pedelecs?

<u>EU Parliament, Council and Commission</u>

- In June 2022, the European Parliament has supported the Commission proposal to "*reach zero-emission road mobility by 2035*". This proposal is based on a false assumption: the replacement of internal combustion engine (ICE) cars, vans and trucks with electric counterparts will not result in "*zero-emission road mobility*". The DLR-report clearly shows that road mobility emission reduction cannot be fully optimised by electrifying the existing ICE-fleet. To achieve further significant reductions, a massive switch to the lightest possible vehicles suitable for the respective trips is also needed. EU Parliament, Council and Commission must acknowledge this by acknowledging the necessity of vehicle weight reduction to achieve emission reduction and by assigning LEVs, including speed pedelecs, a fully-fledged role in their policies to make mobility sustainable.

<u>EU Commissioner Thierry Breton and Director-General Kerstin Jorna</u>

- Instruct DG I2 to create Commission Working Group LEVs, including speed pedelecs
- Instruct DG I2 to prioritize follow-up on TRL-study and develop, in consultation with Member States and LEV-stakeholders, adequate harmonized technical legislation for LEVs, including speed pedelecs
- Instruct DG Grow I2 and DG Grow H2 to consult on how to deal with the Machinery Directive/Regulation in view of adequate harmonized technical legislation for LEVs, including speed pedelecs
- Instruct DG Grow I2 to consult with DG Move B4, CI and C2 on terms of use relevant for LEVs including speed pedelecs in connection with adequate harmonized technical legislation for LEVs

<u>EU Commissioner Adina Vălean and Director-General Henrik Hololei</u>

- Instruct DG Move B4, CI and C2 to consult with DG Grow I2 on terms of use relevant for LEVs including speed pedelecs in connection with adequate harmonized technical legislation for LEVs
- Instruct DG Move B4, C1 and C2 to prioritize consultation and exchange of experience with Member States on adequate and potentially EU aligned terms of use for LEVs, including speed pedelecs

EU Commission DG Grow and Move

- DG Grow I2 to create specific Commission Working Group LEVs, including speed pedelecs
- Follow-up by DG Grow I2 on the 2021 TRL-study and develop, in consultation with Member States and LEV-stakeholders, adequate harmonized technical legislation for LEVs, including speed pedelecs
- Consultation between DG Grow I2 and DG Grow H2 on how to deal with the Machinery Directive/Regulation in view of adequate harmonized technical legislation for LEVs
- Consultation between DG Grow I2 and DG Move B4, CI and C2 on terms of use relevant for LEVs including speed pedelecs in connection with adequate harmonized technical legislation for LEVs

EU Parliament – IMCO and TRAN

- Ask Commission DG Grow to prioritize follow-up on TRL-study in view of adequate harmonized technical legislation for LEVs, including speed pedelecs
- Ask Commission DG Move for consultation with Member States on adequate and potentially EU aligned terms of use for LEVs, including speed pedelecs

Council Competitiveness and Growth + Working Party Competitiveness and Growth

- Ask Commission DG Grow to prioritize follow-up on TRL-study in view of adequate harmonized technical legislation for LEVs, including speed pedelecs
- Ask Commission DG Move for consultation and exchange of experience with Member States on adequate and potentially EU aligned terms of use for LEVs, including speed pedelecs

Member States national level

- Ask Commission DG Grow I2 to follow up on the 2021 TRL-study and to create specific Commission LEV-expert group to consult on adequate harmonized technical legislation for LEVs, including speed pedelecs
- Create specific separate category for speed pedelecs in national traffic code, cfr. Belgium. Introduce mandatory use of cycle paths if speed limit on road is ≥ 50 km. Allow on cycle paths if 30 km/h speed limit on road with possibility of applying speed limit on cycle path.
- Grant same traffic rules as conventional cycles and e-cycles 25 km/h with possibility of prohibiting speed pedelecs if necessary for safety of other road users.
- Remove all senseless prohibitions from the traffic code, for instance ban on speed pedelecs towing trailers.
- Develop a vade mecum on facilities for cycles **and LEVs**. Belgium currently has such a vade mecum, which is regularly updated. However, it still only refers to “bicycles” and does not yet consider the wide variety of LEVs currently on the roads.
- Apply the reduced VAT-rate for the supply of electric bicycles, including speed pedelecs as well as for rental and repairing services of such cycles.
- Include speed pedelecs in all national fiscal/financial incentives aimed at encouraging the use of LEVs.
- Investigate how leasing for speed pedelecs may be encouraged, study the Belgian example.
- Encourage research into LEVs, including speed pedelecs. Reserve funds for answering fundamental LEV-questions and implementing pilot projects.

➢ Mandate in public tenders relating to transport/mobility solutions, the requirement of offering the vehicle with the lowest life cycle emissions per kilometre possible, suitable for the job.

9)Speed pedelec research

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- Twisk, D., Stelling, A., Van Gent, P., De Groot, J., and Vlakveld, W. (2021). Speed characteristics of speed pedelecs, pedelecs and conventional bicycles in naturalistic urban and rural traffic conditions. Accident Analysis & Prevention. https://doi.org/10.1016/j.aap.2020.105940.
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