

# THE E-BIKE PATH: LEGAL APPROACH IN EUROPEAN UNION LAW

Alina Mihaela CONEA\*

## Abstract

*Are there simple things that anyone can do and that can change our world? Some say that using bikes in our cities will make us healthy, more focused and smart, happy, living in a cleaner environment, having safer roads and a lively urban life.*

*E-bikes are becoming more present in our cities and in our lives. One question is how the legal world is coping with new technologies and societal trends. A bicycle with a little e- is just a bike? According to European Union law, the answer is sometimes yes and sometimes no, since **the legal definition of e-bikes is not to be found, whatsoever, in the EU legal acts.** As compared to regular bicycles, electrical bicycles are within the scope of by Internal Market legislation. The present paper concisely addresses the relevant legal acts applying to e-bikes, the terminology used, the rules governing the use of e-bikes and the ongoing debate related to insurance against civil liability in respect of the use of motor vehicles. E-cycling is seen as an integral part of the transport systems of the future.*

*This electrical bike legal insight can help us take a brief ride through some of the EU policies: transport, internal market, competition, health, energy and smart cities.*

**Keywords:** e-bike, cycling, urban transport, new technologies, European policy.

## 1. Introduction

The European cities are facing a complex set of challenges. 68% of the EU population lives in urban areas, a proportion that is growing as the urbanisation trend continues in Europe and worldwide<sup>1</sup>. As the European Commission points out, cities are facing ever greater social challenges in respect of the environment, transport and social cohesion<sup>2</sup>. One possible smart solution to this puzzle is the use of e-bikes. Studies proved that up to 51% of all logistics trips and 25% of commercial delivery trips in EU cities could be done by electric bicycles<sup>3</sup>. The future smart cities will bring together the demand and the supply of innovative solutions.

One question is how the legal world is coping with new technologies and societal trends. A minor illustration is the way European Union regulates this type of vehicle, the electrical bicycle.

The first aim of the paper is to identify the European Union law rules related to electrical bicycles. The paper addresses the relevant legal acts applying to e-bikes, the terminology used, the rules governing the use

of e-bikes and the ongoing debate related to insurance against civil liability in respect of the use of motor vehicles.

The second aim is to point out the awareness of European Union institution over this topic which is apparent from diverse studies, soft law or programmatic acts.

## 2. Legislation

From the point of view of the Internal Market legislation, bicycles are non-harmonized products and are not covered by a particular EU legislation<sup>4</sup>. Bicycles are covered by the Mutual Recognition Regulation<sup>5</sup> and by the General Product Safety Directive<sup>6</sup>. The principle of mutual recognition states that products lawfully sold and marketed in one Member state, should also be allowed to be marketed in another Member state<sup>7</sup>.

As compared to regular bicycles, electrical bicycles are within the scope of Internal Market legislation. The relevant legal acts applying are the Regulation on the approval and market surveillance of two- or three-wheel vehicles and quadricycles<sup>8</sup> and the

\* Assist. Lecturer PhD, Faculty of Law, „Nicolae Titulescu” University of Bucharest (email: alinaconea@gmail.com).

<sup>1</sup> COM (2012) 4701 final, Brussels, 10.7.2012, Communication from the Commission Smart Cities and Communities - European Innovation Partnership.

<sup>2</sup> The Urban Agenda for the EU was officially established by the Pact of Amsterdam, agreed by the EU Ministers responsible for urban matters in May 2016.

<sup>3</sup> European Commission, Directorate-General for Mobility and Transport, The use of Environmentally Friendly Freight Vehicles, Non-binding guidance documents on urban logistics N° 5/6, December – 2017.

<sup>4</sup> Commission Staff Working Document Part 1: Evaluation of the Internal Market Legislation for Industrial Products /\* SWD/2014/023 final, pag.207.

<sup>5</sup> Regulation (EC) No 764/2008 of the European Parliament and of the Council of 9 July 2008 laying down procedures relating to the application of certain national technical rules to products lawfully marketed in another Member State and repealing Decision No 3052/95/EC (Text with EEA relevance) OJ L 218, 13.8.2008, p. 21–29.

<sup>6</sup> Directive 2001/95/EC of the European Parliament and of the Council of 3 December 2001 on general product safety (Text with EEA relevance), OJ L 11, 15.1.2002, p. 4–17.

<sup>7</sup> Fuerea, Augustin, Dreptul Uniunii Europene. Principii, actiuni, libertati- Universul Juridic, Bucuresti, 2016.

<sup>8</sup> Regulation (EU) No 168/2013 of the European Parliament and of the Council of 15 January 2013 on the approval and market surveillance of two- or three-wheel vehicles and quadricycles.

directives on machinery<sup>9</sup>, relating to electromagnetic compatibility<sup>10</sup>, on batteries and accumulators<sup>11</sup>, on waste electrical and electronic equipment<sup>12</sup> and on driving licences<sup>13</sup>.

The Council of the EU, meeting in their Transport, Telecommunications and Energy informal configuration in October 2015 in Luxembourg, endorsed the ‘Declaration on Cycling as a Climate-Friendly Transport Mode’ and called upon the Commission to consider the following actions: integrate cycling into multimodal transport policy, including smart mobility, stressing the need to promote physical infrastructure and behavioural change programs and to Develop an EU level strategic document on cycling<sup>14</sup>.

### 3. Terminology

Electric bicycle is a term, which covers two different concepts of vehicles with an auxiliary electric motor<sup>15</sup>: 1) cycles equipped with an auxiliary motor that cannot be exclusively propelled by that motor. Only when the cyclist pedals, does the motor assist. These vehicles are generally called, by the cycle industry, *pedelecs*, and 2) cycles equipped with an auxiliary electric motor that can be exclusively propelled by that motor. The cyclist is not necessarily required to pedal. These vehicles are generally called *e-bikes*<sup>16</sup>.

The terms *pedelecs* and *e-bikes* are not to be found having a clear and constant meaning in the EU legislation.

The legal definition of *e-bikes* is not to be found, whatsoever, in the EU legal acts. It can only be implied, as admitted by the Commission in Implementing Regulation 2019/72 of 17 January 2019 imposing a definitive countervailing duty on imports of electric bicycles originating in the People's Republic of China: As bicycles are undisputedly the most common type of cycles, it is not surprising that the term *e-bikes*/electric bikes is generally used to refer to all types of electric cycles, in the investigation as well as in the market.<sup>17</sup>

A search on Eur-lex will show the use of the following indefinite terms in the legal acts of the European Union: *pedelec*<sup>18</sup>, bicycles, *e-bikes* and *pedelecs*<sup>19</sup>, powered cycles, two-wheel mopeds, powered two-wheel vehicles<sup>20</sup>, electric power assisted cycles (or *pedelecs*), motor bikes<sup>21</sup>, two- or three-wheel vehicles, fast *e-bikes* (speed *pedelecs*), electric bikes<sup>22</sup>.

The issue is not without relevance as is obvious in the recent debates concerning the proposal for amending the Directive on insurance against civil liability in respect of the use of motor vehicles.

According to Regulation on the approval and market surveillance of two- or three-wheel vehicles and quadricycles (**Type-approval Regulation**)<sup>23</sup>, L-category vehicles comprise powered *two-, three- and four-wheel vehicles* including powered cycles, two- and three-wheel mopeds, two and three-wheel motorcycles, motorcycles with side-cars, light and heavy on-road quads, and light and heavy quadri-mobiles.

The category *Light two-wheel powered vehicle* (L1e) cover the following two types:

<sup>9</sup> Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast) (Text with EEA relevance) OJ L 157, 9.6.2006, p. 24–86.

<sup>10</sup> Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (recast) Text with EEA relevance OJ L 96, 29.3.2014, p. 79–106.

<sup>11</sup> Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC (Text with EEA relevance) OJ L 266, 26.9.2006, p. 1–14.

<sup>12</sup> Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE) Text with EEA relevance OJ L 197, 24.7.2012, p. 38–71.

<sup>13</sup> Directive 2006/126/EC of the European Parliament and of the Council of 20 December 2006 on driving licences (Recast) (Text with EEA relevance) OJ L 403, 30.12.2006, p. 18–60.

<sup>14</sup> Informal meeting of EU ministers for Transport Luxembourg, October 7th, 2015, Declaration on Cycling as a climate friendly Transport Mode.

<sup>15</sup> PRESTO (Promoting Cycling for Everyone as a Daily Transport Mode) is a project of the EU's Intelligent Energy – Europe Programme granted by the Executive Agency for Competitiveness and Innovation (EACI), Give Cycling a Push, Implementation Fact Sheet, Electric Bicycles Legislation, 2012.

[https://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/presto\\_fact\\_sheet\\_legislation\\_en.pdf](https://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/presto_fact_sheet_legislation_en.pdf)

<sup>16</sup> The European Cyclists' Federation, <https://ecf.com/what-we-do/road-safety/electric-bicycle-pedelec-regulation>.

<sup>17</sup> Commission Implementing Regulation (EU) 2019/72 of 17 January 2019 imposing a definitive countervailing duty on imports of electric bicycles originating in the People's Republic of China, C/2019/43, OJ L 16, 18.1.2019, p. 5–107.

<sup>18</sup> European Parliament resolution of 3 July 2013 on Road safety 2011-2020 — First milestones towards an injury strategy (2013/2670(RSP)), OJ C 75, 26.2.2016, p. 49–52.

<sup>19</sup> Prior notification of a concentration (Case M.8478 — Zukunft Ventures/Gustav Magenwirth/Brake Force One/Unicorn Energy/JV) — Candidate case for simplified procedure (Text with EEA relevance.), OJ C 393, 21.11.2017, p. 17–18.

<sup>20</sup> Regulation (EU) No 168/2013 of the European Parliament and of the Council of 15 January 2013 on the approval and market surveillance of two- or three-wheel vehicles and quadricycles (Text with EEA relevance) Text with EEA relevance.

<sup>21</sup> Council Regulation (EU) 2018/2070 of 20 December 2018 amending Regulation (EU) No 1388/2013 opening and providing for the management of autonomous tariff quotas of the Union for certain agricultural and industrial products, ST/13271/2018/INIT, OJ L 331, 28.12.2018, p. 197–209.

<sup>22</sup> Commission Staff Working Document Impact Assessment Accompanying the document Proposal for a Directive of the European Parliament and of the Council amending Directive 2009/103/EC of the European Parliament and the Council of 16 September 2009 relating to insurance against civil liability in respect of the use of motor vehicles, and the enforcement of the obligation to insure against such liability, SWD/2018/247 final - 2018/0168 (COD).

<sup>23</sup> Regulation (EU) No 168/2013 of the European Parliament and of the Council of 15 January 2013 on the approval and market surveillance of two- or three-wheel vehicles and quadricycles.

*Powered cycle* (L1e-A vehicle) which are cycles designed to pedal equipped with an auxiliary propulsion with the primary aim to aid pedalling and output of auxiliary propulsion is cut off at a vehicle speed  $\leq 25$  km/h and output of auxiliary propulsion is cut off at a vehicle speed  $\leq 25$  km/h and a maximum continuous rated or net power  $\leq 1000$  W.

**The Type-approval Regulation does not apply to the 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. Accordingly, this cycles will be treated as regular bicycles.

*Two-wheel moped* (L1e-B vehicle) which is any other vehicle of the L1e category that cannot be classified according to the criteria of a L1e-A vehicle, having a maximum design vehicle speed  $\leq 45$  km/h and maximum continuous rated or net power ( $1 \leq 4000$  W).

So, to sum up, we could consider that there are **excluded to type-approval e-bike** (below 25 km/h and limited to 250 watts) and **type-approval e-bike** (*powered cycle* – below 25 km/h and between 250-1000 watts and *moped*-  $\leq 45$  km/h and  $\leq 4000$  watts).

The term *pedelec* (Electrical Power Assisted Cycles- EPAC) is used in 1 EU legal act<sup>24</sup> as a synonym for *electrical bicycles* and, without a definition, in other various 18 EU documents.

In a confusing way, in some acts, the terms *e-bikes* and *pedelecs* are used as referred to different categories<sup>25</sup>.

In transport literature<sup>26</sup> the term e-bike refers to electrically power-assisted bicycles with functioning pedals. The terms *pedelec* or *slow e-bike* will be used where the electric power output is limited to 250 watts, (available only when the rider places pressure on the pedals) and when the speed is below 25 km/h. Other e-bikes will be called *speed-pedelecs* or *fast e-bikes*.

#### 4. Rules governing the use of e-bikes

There are rules governing the use of e-bikes that are, in part, harmonized at European Union level such is the driving licenses or insurance directive. Other, still are in competence of the member states. This kind of rules govern: helmet obligations, number plate, traffic code and age limits.

Romanian legislation states that while driving on public roads, drivers of mopeds and persons carried on them are required to wear an approved helmet<sup>27</sup>.

Electric cycles in the type-approval are subject to the European harmonized Directive 2006/126 on driving licences. This imposes the AM driving licence for all two and three-wheel vehicles with a maximum design speed of more than 25 km/h but not more than 45 km/h. As a consequence, speed - pedelec riders (mopeds between 25km/h and  $\leq 45$  km/h and  $\leq 4000$  watts) must have an AM driving licence.

Licences granted for any category shall be valid for vehicles in category AM. However, for driving licences issued on its territory, a Member State may limit the equivalences for category AM to categories A1, A2 and A, if that Member State imposes a practical test as a condition for obtaining category AM.

The Court of Justice of European Union had the opportunity to interpret Article 13(2) of Directive 2006/126/EC on driving licences, in the case *Costin Popescu v Guvernul României*<sup>28</sup>. The Court concluded that the provisions of Directive 2006/126/EC must be interpreted as not precluding national legislation, adopted in order to transpose that directive into national law, which terminates the authorization to ride mopeds without holding a driving licence, the issue of which is subject to passing tests or examinations similar to those required for driving other motor vehicles.

#### 5. Internal market -insurances

The European Commission proposed that *electric bikes (e-bikes)* have to be covered also by Directive 2009/103/EC of the European Parliament and the Council of 16 September 2009 relating to insurance against civil liability in respect of the use of motor vehicles. The European Commission had argued that any vehicle with any type of motor in any traffic situation should be treated as a motor vehicle and its users mandated into taking out expensive motor vehicle insurance, even if they had other 3rd party insurance<sup>29</sup>

According to the definition of Directive 2009/103/EC 'vehicle' means any motor vehicle intended for travel on land and propelled by mechanical power, but not running on rails, and any trailer, whether or not coupled`.

The Commission points out that `the evaluation demonstrated that new types of motor vehicles, such as electric bikes (e-bikes), segways, electric scooters etc., already fall within the scope of the Directive as

<sup>24</sup> Commission Regulation (EU) No 512/2013 of 4 June 2013 amending Regulation (EC) No 88/97 on the authorization of the exemption of imports of certain bicycle parts originating in the People's Republic of China from the extension by Council Regulation (EC) No 71/97 of the anti-dumping duty imposed by Council Regulation (EEC) No 2474/93, OJ L 152, 5.6.2013, p. 1–4.

<sup>25</sup> European road safety European Parliament resolution of 27 September 2011 on European road safety 2011-2020 (2010/2235(INI).

<sup>26</sup> Santacreu, Alexandre, Cycling Safety Summary and Conclusions of the ITF Roundtable on Cycling Safety 29-30 January 2018, Paris International Transport Forum, OECD, Paris, <https://www.itf-oecd.org/sites/default/files/docs/cycling-safety-roundtable-summary.pdf>

<sup>27</sup> Art. 36(2) Ordonanța de urgență nr. 195/2002 privind circulația pe drumurile publice, Monitorul Oficial nr. 670 din 3 august 2006.

<sup>28</sup> Case C-632/15: Judgment of the Court (Fourth Chamber) of 26 April 2017 (request for a preliminary ruling from the Înalta Curte de Casație și Justiție — Romania) — Costin Popescu v Guvernul României and Others.

<sup>29</sup> <https://ecf.com/news-and-events/news/european-parliament-officially-takes-its-position-exclude-pedelecs-mandatory>

interpreted by the Court of Justice in its case-law. The Annex 7 of the Proposal for amending Directive 2009/103/EC relating to insurance against civil liability in respect of the use of motor vehicles<sup>30</sup> specifies three judgements in particular, the *Vnuk* judgment of 2014, the *Rodrigues de Andrade* judgement of 2017, and the *Torreiro* judgement<sup>31</sup> of 2017.

The *Vnuk*<sup>32</sup> judgment concerned an accident involving a tractor on a private property in Slovenia, a farm. The CJEU ruled that “Article 3(1) of [the] Directive ... must be interpreted as meaning that the concept of ‘use of vehicles’ in that article covers any use of a vehicle that is consistent with the normal function of that vehicle. That concept may therefore cover the manoeuvre of a tractor in the courtyard of a farm in order to bring the trailer attached to that tractor into a barn, as in the case in the main proceedings, which is a matter for the referring court to determine.”

The *Rodrigues de Andrade*<sup>33</sup> judgement provided further clarifications. The case concerned a fatal accident that occurred in a vineyard involving a stationary tractor. The Court stated that the concept of ‘use of vehicles’ within the meaning of Article 3(1) of that directive covers any use of a vehicle as a means of transport.

The European Parliament decided in 1st reading that e-bikes are excluded from the scope of the directive, since they are “smaller and are therefore less likely to cause significant damage to persons or property than others [such as cars or trucks] are”, and their inclusion “would also undermine the uptake of these vehicles and discourage innovation”<sup>34</sup>. According to European Cycle Federation, the draft report which European Parliament voted, uses type approval to define a motor vehicle within the context of the Directive. This then excludes pedal assisted bicycles with power less than 250 watts and with a motor cut off speed at 25 km/h. Speed - pedelecs will not be excluded as they are type approved<sup>35</sup>.

According to Romanian law, Art.76(1) of Government Emergency Order No 195/2002 on the use of the public highway<sup>36</sup>, vehicles registered, with the exception of those with animal traction, traveling on public roads shall have compulsory insurance for civil

liability in the event of damage to third parties caused by traffic accidents, in accordance with the law.

Art. 9(1) of Government Emergency Order No 195/2002 on the use of the public highway<sup>37</sup>, states that “in order to be registered, registered or admitted into circulation, motor vehicles and agricultural or forestry tractors trailers and trams must be type-approved according to the law”. According to Art.12, “In order to travel on public roads, vehicles, with the exception of those drawn or pushed by hand and by bicycles, must be registered, as appropriate, and bear plates bearing the registration or registration number, with the form, size and content prescribed by the standards in force”.

The mopeds (between 25km/h and ≤ 45 km/h and ≤ 4 000 watts) will fall, accordingly, in this category. By the other hand, *e-bike excluded to type-approval* (below 25 km/h and limited to 250 watts) and *powered cycle type-approval e-bike* (below 25 km/h and between 250-1000 watts) cannot be registered according to Romanian law, and therefore are not subject to insurance.

## 6. Health

The EU institutions indicates the health benefits of using bikes. The Council affirms that cycling benefits society. Children who cycle to school concentrate better than those who are dropped off. Employees who cycle to work claim fewer paid sick days. The health benefits of switching from car commuting to bicycle commuting amply outweigh the safety risks.<sup>38</sup> The Commission recognize the health benefits of cycling<sup>39</sup>.

Physical inactivity is identified as the fourth leading risk factor for global mortality, representing six per cent of deaths globally. Levels of physical inactivity are rising in many countries. Across the globe, the percentage of children that walk or cycle to school has decreased from 82% to 14% within the last 30 years. International groups, including the World Health Organization, have thus recommended policy changes to combat physical inactivity. In addition, there is a growing recognition that reduced levels of physical activity can partly be explained by the dominance of the private car as a mode of transport in

<sup>30</sup> Commission Staff Working Document Impact Assessment Accompanying the document Proposal for a Directive Of The European Parliament And Of The Council amending Directive 2009/103/EC of the European Parliament and the Council of 16 September 2009 relating to insurance against civil liability in respect of the use of motor vehicles, and the enforcement of the obligation to insure against such liability, SWD/2018/247 final - 2018/0168 (COD).

<sup>31</sup> Judgment of the Court (Sixth Chamber) of 20 December 2017, José Luís Núñez Torreiro v AIG Europe Limited, Sucursal en España and Unión Española de Entidades Aseguradoras y Reaseguradoras (Unespa), Case C-334/16, ECLI identifier: ECLI:EU:C:2017:1007.

<sup>32</sup> Judgment of the Court, 4 September 2014, Damijan Vnuk v Zavarovalnica Triglav, Case C 162/13, ECLI identifier: ECLI:EU:C:2014:2146

<sup>33</sup> Judgment of the Court (Grand Chamber) of 28 November 2017, Isabel Maria Pinheiro Vieira Rodrigues de Andrade and Fausto da Silva Rodrigues de Andrade v José Manuel Proença Salvador and Others, Case C-514/16, ECLI identifier: ECLI:EU:C:2017:908.

<sup>34</sup> T8-0110/2019, Decision by Parliament, 13/02/2019, 1st reading/single reading, 2018/0168(COD) Motor Insurance Directive: compensation of victims of motor vehicle accidents, insurance conditions and cover, combatting uninsured driving.

<sup>35</sup> <https://ecf.com/news-and-events/news/european-parliament-officially-takes-its-position-exclude-pedelecs-mandatory>

<sup>36</sup> Ordonanța de urgență nr. 195/2002 privind circulația pe drumurile publice, Monitorul Oficial nr. 670 din 3 august 2006.

<sup>37</sup> Ordonanța de urgență nr. 195/2002 privind circulația pe drumurile publice, Monitorul Oficial nr. 670 din 3 august 2006.

<sup>38</sup> Informal meeting of EU ministers for Transport Luxembourg, October 7th, 2015, Declaration on Cycling as a climate friendly Transport Mode.

<sup>39</sup> [https://ec.europa.eu/transport/themes/clean-transport-urban-transport/cycling\\_en](https://ec.europa.eu/transport/themes/clean-transport-urban-transport/cycling_en)

urban society, as well as the role it plays in inhibiting both walking and cycling.<sup>40</sup>

Internationally, transport policy makers and urban planners are interested in encouraging cycling, given the potential to simultaneously achieve a number of goals – including addressing congestion; encouraging a switch from more polluting modes and thereby reducing local air pollution and greenhouse gas emissions; and increasing physical activity and thereby addressing obesity and a range of other health issues. Electrically-assisted bikes are one tool that may help to achieve this goal<sup>41</sup>.

Beside the health benefits associated with physical activity, cycling is silent and clean, and shifting from motorised travel to cycling can reduce congestion and greenhouse gas emissions, whilst offering an affordable and inclusive mobility option<sup>42</sup>.

## 7. Smart city

The European Commission affirms that EU has developed a shared European vision of sustainable urban and territorial development. European cities should be places of advanced social progress and environmental regeneration, as well as places of attraction and engines of economic growth based on a holistic integrated approach in which all aspects of sustainability are taken into account<sup>43</sup>.

The EU co-funded research project CycleLogistics estimated that up to 51% of all logistics trips and 25% of commercial delivery trips in EU cities could be done by e-bikes. The world's cities are facing a complex set of challenges related to urban mobility, which are predicted to worsen as the volume of traffic caused by commercial delivery services and private trips increases<sup>44</sup>.

Many bikes produced today are hi-tech products. New, lightweight materials are being developed and tested that can be used in other areas as well. This is especially true for electric bikes and their innovative components like batteries and new power trains, which have made electro-mobility a reality in the EU. Currently, many more electric bikes than electric cars

are sold in Europe. Cycling is also becoming more and more connected, using ICT for applications like route planning, public bike systems or GPS tracking. With these new services, cycling becomes an integral part of the transport systems of future smart cities.

E-velomobility, is as an example of active e-mobility with relatively high user uptake compared to other active modes of e-mobility. Compared to electric cars, e-bikes consume less energy, are a more affordable mode of transport and have potential health benefits. Compared to 'traditional' cycling, e-cycling might appeal to those not currently interested in cycling or encourage existing cyclists to cycle more. It becomes clear that increasing the uptake of e-velomobility would help towards multiple policy goals such as health, sustainable and active transport, and business innovation<sup>45</sup>.

## Conclusion

Electrical bicycles are within the scope of Internal Market legislation and the most relevant act applying is the Regulation on the approval and market surveillance of two- or three-wheel vehicles and quadricycles. There are rules governing the use of e-bikes that are, in part, harmonized at European Union level such is the driving licenses or insurance directive. Other, still are in competence of the member states.

The legal definition of e-bikes is not to be found in the EU legal acts. There are irregular terms in the legal acts of the European Union: bicycles, e-bikes and pedelecs<sup>46</sup>, powered cycles, two-wheel mopeds, powered two-wheel vehicles, electric power assisted cycles (or pedelecs), motor bikes, two- or three-wheel vehicles, fast e-bikes (speed pedelecs) or electric bikes.

Although, e-cycling is seen as an integral part of the transport systems of the future, we can observe a contrast between the unclear definitions of electrical bicycles in European Union law and the impact on the internal market and prospective advantages on future smart cities.

The law is trying to keep up with societal and market trends.

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<sup>42</sup> Santacreu, Alexandre, *Cycling Safety Summary and Conclusions of the ITF Roundtable on Cycling Safety 29-30 January 2018*, Paris International Transport Forum, OECD, Paris, <https://www.itf-oecd.org/sites/default/files/docs/cycling-safety-roundtable-summary.pdf>

<sup>43</sup> COM(2012) 4701 final, Brussels, 10.7.2012, Communication from the Commission Smart Cities And Communities - European Innovation Partnership

<sup>44</sup> <http://cyclelogistics.eu/about>

<sup>45</sup> Behrendt, Frauke. "Why Cycling Matters for Electric Mobility: Towards Diverse, Active and Sustainable e-Mobilities." *Mobilities* 13, no. 1 (January 2, 2018): 64–80. <https://doi.org/10.1080/17450101.2017.1335463>

<sup>46</sup> Prior notification of a concentration (Case M.8478 — Zukunft Ventures/Gustav Magenwirth/Brake Force One/Unicorn Energy/JV) — Candidate case for simplified procedure (Text with EEA relevance. ), OJ C 393, 21.11.2017, p. 17–18.

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