

Best practice bicycle safety – improvement fact sheet

# Technology and design: electric bicycles

## Overview

In 2017, more than 10% of the bikes sold in Europe were **electric**, compared to only 1.5% of cars. Since 2006, sales of electric bikes have multiplied by 20, with an average **annual growth rate of almost 30%**. When France introduced a national purchase incentive scheme in 2017, 61% of beneficiaries stated in a survey that they used the electric bicycles to replace car journeys [1].

Bike-sharing makes **work commutes and workplace trips more efficient and increases connectivity** in a city by providing **easy and fast access to first-mile/last-mile, enhancing the productivity** of the urban economy. For the Dublin bike-sharing system, every 1 euro invested created 12.3 euros of **time benefits**, wider **economic benefits** and **health benefits**. The **value of the time savings alone is in a range of 6 – 10.4 million euros** [1].



## Positive effects

With the introduction of **electric bikes** many advantages appeared: the pedal assist gives cyclist a **boost** which helps him or her to cope with hills, inclines and rough terrain, allowing for a **smoother ride** thus **reducing body stress** [3]. It also enables a ride with **greater power and precision** than a regular bicycle. It **gets people cycling who may not be able to ride a conventional bike** due to physical condition or age. It is easier to take **longer rides** without physical exhaustion. Electric bikes are great for commuting to work on short distances or running quick errands. With alternative ways to travel to



your destination, the commute can be faster than a car stuck in traffic, especially in the city centres. Those who use e-bikes instead of cars, reduce fuel and pollution, helping to **improve air quality and the environment**.

A study [2] has shown that people who ride electric bikes exercise **almost as much as those who ride conventional bikes**, without feeling as if they have completed a demanding workout. The reason for this is that the rider still has to pedal even with pedal assistance and this results in burning calories.

## Benefits

	<p><b>More efficient</b> commuting</p>
	<p>Time <b>savings</b>, economic and health <b>benefits</b></p>
	<p><b>Modal split</b> in favour of bicycle transport since more people will get attracted to cycling</p>

## Issues

	<p><b>Costs of building appropriate bicycle infrastructure</b> for supporting new technology</p>
	<p><b>Inexperienced elderly riders</b> of e-bikes have an <b>increased risk of severe crashes or falls</b></p>

## Examples



*“Cycling as a new technology” aims to help shape a ‘new technologies’ strategy by assessing the potential of new cycling technologies, such as e-bikes, public bike-sharing, and cargo bikes. With this strategy, ECF was able to better engage in EU level policy in order to support the continued deployment and uptake of cycling in Europe [4].*

## References and links

1. <https://ecf.com/sites/ecf.com/files/TheBenefitsOfCycling2018.pdf>
2. Hall, C., Hoj, T. H., Julian, C., Wright, G., Chaney, R. A., Crookston, B., West, J. (2019). Pedal-assist mountain bikes: a pilot study comparison of the exercise response, perceptions, and beliefs of experienced mountain bikers. *JMIR formative research*, 3(3), e13643.
3. <https://www.markelinsurance.com/resources/bicycle/benefits-of-e-bikes>
4. [https://ecf.com/sites/ecf.com/files/FINAL-REPORT-150116\\_New-tech.pdf](https://ecf.com/sites/ecf.com/files/FINAL-REPORT-150116_New-tech.pdf)

**Publisher & Media Owner:** SABRINA Project Partners

**Contact:** Mrs. Olivera Rozi, Project Director, European Institute of Road Assessment – EuroRAP | [olivera.rozi@eurorap.org](mailto:olivera.rozi@eurorap.org) | [www.eira-si.eu](http://www.eira-si.eu)

**Graphic Design:** Identum Communications GmbH, Vienna | [www.identum.at](http://www.identum.at)

**Image credits:** iStock, SABRINA Project Partners



**SABRINA: No fears  
about safety on  
two wheels.**

Copyright ©2022

The SABRINA Project has been co-funded by European Union Funds (ERDF, ENI).  
The information and views set out in this document are those of the SABRINA Project Partners and do not necessarily reflect the official opinion of the European Union/Danube Transnational Programme.



**#safetyon2wheels**