



Best practice bicycle safety – improvement fact sheet

Energy and resources

Overview



Cycling is a **cheap mode of transport**. The annual personal costs of cycling range from 175 to 300 euros. By comparison: the costs involved in driving a car range from 2,500 to 8,500 euros a year, based on an average annual mileage. Cycling also scores well in terms of the **social impact** of a kilometre of urban travel by bicycle compared to such costs involved in a kilometre of travel by car or by bus: each kilometre of bicycle use yields a **social benefit of 0.68 euros per kilometre**, whereas **cars and buses cost society 0.37 euros and 0.29 euros per kilometre**, respectively. The annual **infrastructure costs** per traveller kilometre are 0.03 euros for bicycles, 0.10 euros for cars, 0.14 euros for buses, and 0.18 euros for trains. Besides economic benefits, cycling provides **ecological benefits related to energy consumption and gas emissions [1]**.

Positive effects




Increased bicycle use can result in **lower greenhouse gas emissions**. Switching from a car to a bicycle saves 150 g of CO₂ per kilometre. For every 7 km travelled by bicycle rather than by car will save an emission of 1 kilogram of CO₂. Cars are used for 3.6 billion short trips (< 7.5 km) annually. Replacing all these short car trips by cycling would save roughly 2.0 megatons of CO₂ per annum. Increased bicycle use also contributes to **cleaner air**. Switching from a car to a bicycle saves 0.2 g of NO_x per kilometre and 0.01 g of particulate matter per kilometre. Each 7 km by bicycle rather than by car will save an emission of 1.5 g of nitrogen oxides and 7 mg of particulate matter. By replacing 3.6 billion short car trips with cycling would save roughly 2.6 kilotons of NO_x and 0.13 kilotons of particulate matter per year [1].

The current levels of cycling in the EU correspond to fuel savings of more than **3 billion litres per year**, which **corresponds to the fuel consumption for road transport of a country like Ireland**. The value of these fuel savings is almost **4 billion euros**. The average weight of a car in the EU in 2017 was almost 1400 kg, a bike rarely weighs more than 20 kg, or **1.5% of the weight of a car**. This means that much **less resources are needed for its construction**. Some of the resources are the same, but used in much less quantities (e.g. steel, aluminium, different polymers), others, like platinum or palladium for catalytic converters which cause significant emissions and environmental damage during their extraction, are not used at all for the manufacturing of bicycles [2].

Benefits


	<p>Lower greenhouse gas emissions</p>
	<p>Cleaner air</p>
	<p>Low annual infrastructure costs per traveller kilometre</p>



Issues



	<p>To provide appropriate bicycle infrastructure</p>
	<p>Necessary costs to form an accessible, well connected and quality cycling infrastructure</p>
	<p>Bicyclists' safety remains a point for attention</p>

Examples

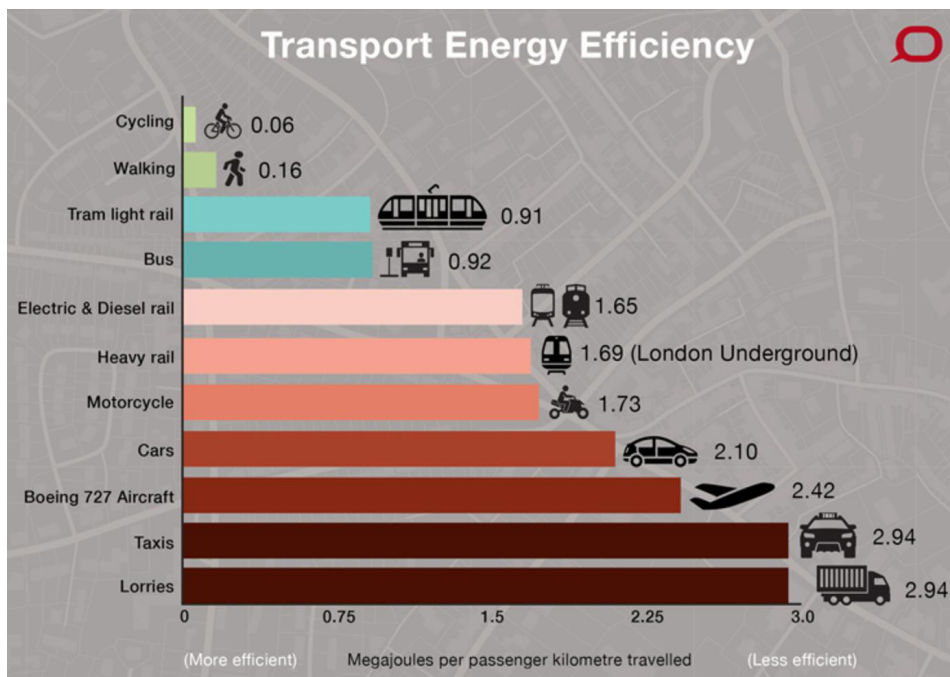
Follow it
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1km by  = 21g of CO₂ emissions.

It saves 250g CO₂ emissions
 compared to  

According to the ECF, driving one kilometre by bicycle instead of a car can save up to 250 grams of CO₂ emissions. Furthermore, per every kilometre driven by bicycle, a person produces only 21 grams of CO₂ if we take in consideration materials and energy used during bicycle production [3].



According to many studies, cycling is a very efficient and energy-saving mode of transport, while some even state that cycling is currently the most efficient transport mode, consuming only 0.06 megajoules per passenger per kilometre travelled [4].

References and links

1. Harms, L. & Kansen, M. (2018). *Cycling Facts*. Netherlands Institute for Transport Policy Analysis. KiM. Ministry of Infrastructure and Water Management. In: <https://english.kimnet.nl/binaries/kimnet-english/documents/publications/2018/04/06/cycling-facts/Cycling+facts.pdf>
2. <https://ecf.com/sites/ecf.com/files/TheBenefitsOfCycling2018.pdf>
3. <https://twitter.com/eucyclistsfed/status/669797905113460736>
4. <http://www.gci.org.uk/Documents/E6-40-04-021.pdf>

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

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