

# Road Safety Factsheet

## RoSPA's guide to electric motorcycles

March 2021

### Electric motorcycles

Due to technological advances and increasing concerns about climate change, electric vehicles are rapidly becoming more popular in the UK, with electric cars accounting for over 10 per cent of all new passenger car registrations in 2020<sup>1</sup> and the UK being one of the largest markets in Europe for electric vehicle sales.<sup>2</sup> Despite the huge uptake in electric modes of transport such as cars, scooters and bicycles in recent years, electric motorcycles (e-motorcycles) are not currently as popular. However, demand is growing: the Motorcycle Industry Association (MCIA) reported 1,955 new registrations of electric mopeds, motorcycles and tricycles in the 12 months up to October 2020, a 50 per cent increase from the previous year.<sup>3</sup>

The use of e-motorcycles, like other electric vehicles, provides many benefits to the rider and the environment as opposed to using a traditional motorcycle, such as their efficient electric motors, quiet engines and reduced power consumption.<sup>4</sup> As e-motorcycles are not yet widespread in the UK, it can be hard to find the information you need if you are considering buying one. Therefore, RoSPA has put together this factsheet containing some useful information about e-motorcycles to help guide you, including the law surrounding e-motorcycles, which grants are available for their purchase, and why you should or should not buy one.

### Electric motorcycle law and grants

The licensing rules concerning e-motorcycles are the same as their non-electric counterparts,<sup>5</sup> as can be seen in the following table:<sup>6</sup>

Type of e-motorcycle (or standard motorcycle)	Licence category	Requirements to obtain a licence	Minimum age to ride this category
Light motorcycles: up to 11kW and 125cc	A1	CBT, theory test, practical test	17
Standard motorcycles: up to 35kW	A2	Direct access: theory and practical test Progressive access: two years' experience on an A1 motorcycle, with a further practical test	19

Unrestricted motorcycles	A	Direct access: CBT theory and practical test Progressive access: held an A2 licence for a minimum of two years, passed practical test	Direct access: 24 Progressive access: 21
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In the same way as a traditional motorcycle, you will have to register your e-motorcycle and insure it. You will also need to tax the bike; if the bike is completely electric, your tax will be free. If the bike is a hybrid, you will have to pay for your tax, but it is likely to be cheaper than that of a standard motorcycle.<sup>5</sup>

For further details, please visit: <https://www.gov.uk/ride-motorcycle-moped/bike-categories-ages-and-licence-requirements>

As is the case for traditional motorcycles, you must wear a helmet that meets British safety standards whilst riding an e-motorcycle on UK roads. Your helmet must possess one of the following criteria:<sup>7</sup>

- British Standard BS 6658:1985, carrying the BSI Kitemark
- UNECE Regulation 22.05
- A European Economic Area member standard offering at least the same safety and protection as BS 6658:1985 and carrying a mark equivalent to the BSI Kitemark.

If you ride with a visor or goggles, they must either:<sup>7</sup>

- Meet a British Standard and display a BSI Kitemark, or
- Meet a European standard offering at least the same safety and protection as the British Standard and carry a mark equivalent to the BSI Kitemark (UNECE Regulation 22.05).

The UK Government provides a “plug-in grant” to encourage people to purchase low emission vehicles. The Government gives this grant to particular dealerships and manufacturers, and 27 models of zero CO<sub>2</sub> emissions motorcycles are eligible. For low emission motorcycles, the plug-in grant pays for 20% per cent of the purchase price of the motorcycle, up to a maximum of £1,500.<sup>8</sup>

More details about the plug-in grant can be found here: <https://www.gov.uk/plug-in-car-van-grants>

## The benefits of electric motorcycles

There are many benefits to using an e-motorcycle. Unlike standard motorcycles that are powered by fuel, e-motorcycles gain their power from electricity in the form of electric motors that run off a rechargeable battery.<sup>9</sup> The following are some key benefits of owning and using an e-motorcycle:<sup>9,10</sup>

- As e-motorcycles do not have a gearbox or clutch due to their reliance on an electric motor for power, they are much quieter than traditional motorcycles (less noise pollution), they require less maintenance as they have fewer moving parts, and they are lightweight (this is also due to technology improving and better materials being used when building e-motorcycles)

- Electric motorcycles are great for commuting, as their battery life lasts longer when being used for city riding. Some e-motorcycles even have regenerative braking, meaning the battery can be recharged slightly when stopping and starting
- Electric motorcycles do not produce exhaust emissions, contributing to lower air pollution which is particularly important in cities/densely populated areas.<sup>11</sup> It is for this reason that all electric vehicles are exempt from UK Clean Area Zone (CAZ) fees, meaning you will not have to pay when riding an e-motorcycle through a CAZ (or the ULEZ in London).

Further information about Clean Area Zones can be found here: <https://www.gov.uk/check-clean-air-zone-charge>

Although e-motorcycles can initially be more expensive than traditional motorcycles, the use of an e-motorcycle can save you money in the long term due to the fact it is much cheaper to charge a battery than to fill up a tank full of fuel. Furthermore, the price of e-motorcycles will reduce over time as the market expands and the technology becomes more commonplace.<sup>10</sup>

## Drawbacks of electric motorcycles

Although e-motorcycles have many benefits, they may not be appealing to some riders. As they have much fewer moving parts and require much less maintenance than traditional motorcycles, e-motorcycles may not appeal to people who like to spend time taking their bikes apart, maintaining, repairing and upgrading them. Similarly, e-motorcycles may not appeal if you are passionate about the riding experience of traditional motorcycles, due to the fact they are silent and do not have exhaust noises.<sup>12</sup>

Another issue associated with e-motorcycles is the fact that they must be plugged in regularly in order for their battery to charge, and this can take up to eight hours. However, this process can often be done using a standard wall socket,<sup>13</sup> and some e-motorcycles have removable batteries that could be swapped out for another battery with a full charge so the bike can always be available for use.<sup>14</sup>

There is also the argument that e-motorcycles (and electric vehicles in general) are not as good for the environment as they seem, as manufacturing and charging them still uses up valuable resources, especially if these resources are from a non-renewable source.<sup>10</sup> However, a large percentage of energy in the UK is now from renewable sources, and this percentage is increasing every year.

## Electric motorcycle safety

Motorcycle riders are one of the most vulnerable groups of road users, with motorcycle collisions accounting for a significant percentage of road casualty figures every year, despite the fact that they are much less common than other forms of transport such as cars. It is therefore incredibly important to keep safety in mind, regardless of the type of motorcycle you are riding. As well as always wearing a helmet and eye protection that meets the safety requirements detailed above, RoSPA strongly advises the following:

- Always wear full protective biking gear. This is not required by law but could save your life in the event of a collision<sup>7</sup>
- Ride defensively by thoroughly observing your environment so you can anticipate and plan for oncoming hazards, and assume that other motorists have not spotted you

- Keep yourself as visible as possible by using your lights and wearing reflective clothing and accessories over your protective gear
- Consider taking some further training to improve your confidence and skills, such as the advanced training offered by [RoADAR](#) or [IAM](#)
- Maintain the two-second rule and watch your speed, allowing for enough time to respond to hazards in front of you
- Be extremely vigilant when riding on rural roads, as they can be incredibly dangerous for motorcyclists. Please read RoSPA's [Rural Road Safety factsheet](#) for more information.

RoSPA has a resource for avoiding common motorcycle collisions which can be found here: <https://www.rospa.com/rospaweb/docs/advice-services/road-safety/motorcyclists/ridesafe.pdf>

## References

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- <sup>1</sup> Statista. Passenger car registrations in the United Kingdom between 2016 and 2020, by fuel type. Statista website. <https://www.statista.com/statistics/299031/fuel-types-of-new-cars-registered-in-the-united-kingdom/>. Published January 2020. Accessed February 2, 2021.
- <sup>2</sup> Wagner I. Electric vehicle market in the United Kingdom – Statistics & Facts. Statista website. [https://www.statista.com/topics/2298/the-uk-electric-vehicle-industry/#dossierSummary\\_chapter1](https://www.statista.com/topics/2298/the-uk-electric-vehicle-industry/#dossierSummary_chapter1). Published May 5, 2020. Accessed February 2, 2021.
- <sup>3</sup> Motorcycle Industry Association. January 2021 Press Statistics: Mopeds, Motorcycles & Tricycles. <https://mcia.co.uk/en/market-intelligence>. Published January 2021. Updated February 2021. Accessed February 2, 2021.
- <sup>4</sup> Elliott G. Your complete guide to electric motorcycles in 2020 and beyond. Bikesure website. <https://www.bikesure.co.uk/bikesureblog/2018/03/your-complete-guide-to-electric-motorcycles.html>. Published March 6, 2018. Updated August 11, 2020. Accessed February 2, 2021.
- <sup>5</sup> Batchellor J. Are electric scooters and motorbikes road legal in the UK? Bikesure website. <https://www.bikesure.co.uk/bikesureblog/2020/03/electric-scooters-motorbikes-road-legal-uk.html>. Published March 12, 2020. Accessed February 2, 2021.
- <sup>6</sup> Department for Transport. Riding a motorcycle, moped or motor tricycle. GOV.UK website. <https://www.gov.uk/ride-motorcycle-moped/bike-categories-ages-and-licence-requirements>. Accessed February 2, 2021.
- <sup>7</sup> Department for Transport. Motorcycle helmets: the law. GOV.UK website. <https://www.gov.uk/motorcycle-helmet-law>. Accessed February 9, 2021.
- <sup>8</sup> Department for Transport. Low-emission vehicles eligible for a plug-in grant. GOV.UK website. <https://www.gov.uk/plug-in-car-van-grants>. Accessed February 2, 2021.
- <sup>9</sup> Blue School of Motoring. The benefits of an electric motorcycle: why you need an electric motorcycle. Blue School of Motoring website. <https://www.blueschoolofmotoring.com/blog/2019/04/19/the-benefits-of-an-electric-motorcycle-why-you-need-an-electric-motorbike/>. Accessed February 4, 2021.
- <sup>10</sup> Hinchliffe M. Benefits of an electric motorcycle. Motorbike Writer website. <https://motorbikewriter.com/benefits-electric-motorcycle/>. Published November 17, 2017. Accessed February 9, 2021.
- <sup>11</sup> Liu Y and Lai I K W. The Effects of Environmental Policy and the Perception of Electric Motorcycles on the Acceptance of Electric Motorcycles: An Empirical Study in Macau. *SAGE Open*. 2020;10(1). <https://journals.sagepub.com/doi/full/10.1177/2158244019899091#>. Published January 6, 2020. Accessed February 2, 2021.

<sup>12</sup> Alais H. The Pros and Cons of Electric Motorcycles in 2020. National Motorists Association website. <https://www.motorists.org/blog/the-pros-and-cons-of-electric-motorcycles-in-2020/>. Published May 28, 2020. Accessed February 9, 2020.

<sup>13</sup> Campion A. Electric motorbikes explained. Confused.com website. <https://www.confused.com/motorbike-insurance/guides/electric-motorcycles>. Published August 3, 2020. Accessed February 9, 2020.

<sup>14</sup> Tinkley B. Electric Motorcycles: Is It Time to Upgrade? Lexham Insurance website. <https://www.lexhaminsurance.co.uk/blog/electric-motorcycles-is-it-time-to-upgrade/>. Published January 23, 2020. Accessed February 9, 2020.