

Consumer guide to e-bikes, e-mopeds and mini-EVs

Erin Partlan

Guide to e-bikes

E-bikes range in price from \$500 to [\\$8000](#), depending on factors from power output to smartphone compatibility. Most look like regular bicycles, especially ones with an integrated battery, though some [toe the line](#) in looking like mopeds or motorcycles. The Boston-designed [Copenhagen Wheel](#) is a smart add-on that can turn a regular bike into a pedal-assist bike.

In Massachusetts, e-bikes do not require registration, but they are [not allowed on shared use pathways and the rider must have a valid driver's license](#). Additionally, Massachusetts does not currently separate e-bikes into separate classes, but many manufacturers do. Commercially available bikes are categorized by top speed and whether it can be operated without pedaling.

Class 1: Pedal assist bikes with a limit of 20 mph.

These are the bikes that make up the fleet of electric bikes from companies like Uber and Lyft. The motor kicks in when the user is pedaling to provide some of the energy, but will not work without pedaling. Most models come with different assistance settings from no assistance to high assistance.

Class 2: E-bikes with a throttle and a limit of 20 mph.

In these bikes, a throttle can engage the motor without the user needing to pedal. The difference between a class 2 e-bike and an e-moped is the ability to pedal.

Class 3: Pedal assist bikes with a limit of 28 mph.

Like class 1, these bikes have motors that only kick in with pedaling, but due to a more powerful motor they are able to increase user speeds far past those of non-assisted bicycles.

Let's put these speeds in perspective. In city riding, bicyclists average about [11–12 mph](#), whether it is in the bike lane or car lane. Recreational cycling typically falls in the 13–15 mph range, while fitness cycling is often at speeds from 16–19 mph. Racing cyclists can train at speeds of [20–24 mph](#), and the Tour de France riders average 25 mph over 125 miles!

This is all to say that speeds made possible with an e-bike are probably faster than most people will want to travel anyway. Instead, the real benefit of an e-bike is the ability to travel at normal bike speeds or while towing heavy cargo without nearly as much effort.

Guide to e-mopeds and mini-EVs

Compared to kick scooters and e-bikes, e-mopeds and mini-EVs are far less common on the road. They are associated with tourists and city sightseeing, but not for everyday use. Since

mini-EVs and e-mopeds can be operated without a motorcycle license—due to top speeds of 25 and 30 mph respectively—they are optimal bicycle alternatives.

In addition to carrying cargo and passengers, these smaller vehicles can fit into parking spots too small for cars, and can make city driving feel like less of a nightmare. Unlike e-bikes and kick scooters, e-mopeds and mini-EVs need to be registered. In Massachusetts, submit a moped/scooter application for e-mopeds and a low speed vehicle application for mini-EVs.

All signs point to a future with more shared e-mopeds. Scoot Networks began offering rentals in 2012 of electric mopeds (called scooters prior to the popularity of kick scooters) to transport people over the hills of San Francisco. In New York, Revel recently concluded a trial of e-moped sharing and have now deployed [1,000 vehicles](#) to Brooklyn and Queens. In Philadelphia, Scoobi is a year into its 100 scooter deployment. Bird itself has even announced plans to produce and deploy [moped type](#) two seaters.

Mini-EVs are not yet commercial options for the average American household, though they are popular in other countries. Scoot Networks has expanded its offering to include mini-EVs, e-bikes, and electric kick scooters as well. While Scoot's mini-EVs are currently only in San Francisco, Scoot has very recently been [acquired by Bird](#), who is famous for deploying electric scooter rentals quickly throughout the country.