
New Report Highlights the Potential for E-bikes to Improve Climate, Equity, and Access in Cities

New research from the [Institute for Transportation and Development Policy](#) (ITDP) and supported by the [Climateworks Foundation](#) provides the first global analysis of how e-bikes are being used and what a large-scale increase in use could mean for climate emissions. The paper strongly supports the use of e-bikes as substitutes for high-polluting, high-speed cars and two-wheelers, especially as e-bikes become more accessible and safe with clearer standards for production and use.

Washington, DC (12 March 2024) – While vehicle electrification has focused primarily on large, high-polluting vehicles like buses, trucks, and cars, electrification of bicycles has been largely overlooked as a climate strategy. Many countries and cities have not yet clearly defined what e-bikes are, what quality standards they must meet, and where they can be used safely and efficiently. However, e-bikes are increasingly being used as substitutes for vehicles due to their ability to cover similar distances at a much lower cost than electric cars. A win-win for climate and access goals, e-bikes have a clear role in today’s urban transport networks.

A new report from ITDP, [E-bikes: Charging Toward Compact Cycling Cities](#), defines e-bikes and evaluates how and where they are currently being used, their benefits, challenges to widespread adoption, and how governments can respond to their growth. This report defines e-bikes as electrically powered two- and three-wheeled cycles that are compatible in terms of size and maximum speed with conventional (non-motorized) bicycles. E-bikes are clearly differentiated from faster, heavier electric two-wheelers and motorcycles. The report positions e-bikes as critical to climate-friendly, livable, equitable cities because of their potential to replace a large share of vehicle trips and reduce carbon emissions. It also provides guidance to municipal, regional, and national governments on how to encourage and integrate e-bikes into existing transport networks to achieve these goals.

E-bikes are close substitutes for cars and two-wheelers because they cover longer distances with less effort. Thus, e-bikes will play a key role in shifting passenger and freight trips away from high-polluting private vehicles and generating fewer emissions if used at scale. The report finds that approximately 1.25 billion e-bikes in use globally would reduce greenhouse gas emissions from passenger transport by 400 megatonnes, equivalent to the total carbon dioxide emissions of the United Kingdom. This will require an additional 1 billion e-bikes in use by 2050.

Beyond the climate benefits, demand for e-bikes presents an opportunity for domestic e-bike and parts manufacturing, and other economic development opportunities. In 2022, the global market for e-bikes was valued at USD \$37.5 billion, or about 15% of the global market for all electric vehicles. With demand for e-bikes growing rapidly in many regions, the global market is expected to increase with an annual growth rate of 15%. Many countries — including Japan, Brazil, the US, Australia — are experiencing a rapid rise in demand for e-bikes.

E-bikes come in various forms and serve multiple functions, including transporting passengers and goods. Notably, the definition put forth in the report does not include e-mopeds and e-motorcycles without pedals and with maximum speeds above 45 kph to be e-bikes. Given that e-bikes and two-wheelers are often conflated, despite important differences in their use, it is important to make a clear distinction and develop regulations accordingly. Strategies to electrify two-wheeler fleets more broadly can encourage more of a modal shift to e-bikes and provide a key, zero-emission alternative to private vehicle use.

This findings in this paper draws on existing research as well as lessons learned from government and private-sector successes and shortcomings from around the world. The report also relies heavily on data gathered from various interviews with e-bike experts who work in nine countries across six continents, including ITDP staff and external consultants.

The key recommendations offered in the report highlight the need for governments to recognize e-bikes as an important piece of a sustainable transport network, and take steps to ensure e-bikes are affordable, safe, and accessible. This includes designing infrastructure that separates people on e-bikes and bicycles from higher-speed vehicle traffic; integrating e-bikes into public bikeshare programs to lower the barrier to entry; and providing incentives to make e-bikes more affordable to purchase, similar to those provided for electric cars. Recommendations also encourage national level action, including integrating e-bikes into broader climate and electrification plans, and establishing quality standards for e-bikes and their parts.

“Cycling should be a viable choice for everyday journeys for people of all ages and abilities in our cities. With the recent boom in e-bikes all around the world, proper regulation and investment into urban cycling infrastructure has great potential to encourage more cycling and less private vehicle use,” said **Heather Thompson, CEO of ITDP**. “Beyond e-bikes themselves, local and national governments need to focus on the practice of building cities and neighborhoods that facilitate sustainable, efficient mobility for everyone.”

[Read and download the full report here.](#)

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