



# ELECTRIC AVENUE

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SUPPLEMENT

# ELECTRIC BIKE EVOLUTION

YEAR OR ERA	KEY EVENT	DESCRIPTION
1890s	First Patents	Early e-bike designs began with Ogden Bolton Jr.'s rear hub motor (1895) and Hosea W. Libbey's mid-drive concept.
Early 1900s	Gasoline Wins	Gasoline engines outperformed early e-bikes due to lower costs and easier refueling.
1940s	WWII Utility	Wartime gasoline shortages led to the creation of Belgium's Socovel e-bike.
1970s	Oil Crisis Interest	High oil prices sparked innovations like Mike Corbin's City Bike and a 165 mph speed record.
1991	Battery Breakthrough	Lithium-ion batteries solved e-bike weight and bulk issues.
1993-1995	Modern Systems	Yamaha and Panasonic developed "Pedelects" and Peugeot launched an electric scooter.
2009	Modern E-Moto Era	Mass-produced electric motorcycles like the Zero S and Brammo Enertia entered the market.
2020	The "Bike Boom"	The pandemic sparked a surge in e-bike popularity for safer commuting.
Today	Mass Adoption	Modern e-bikes feature smart technology, lightweight frames, and ranges exceeding 60 miles.

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## Early beginnings (late 1800s – early 1900s)

Electric bicycles and motorcycles go back to the late 19th century. One of the earliest known designs came in 1895 by Ogden Bolton Jr.. His idea used a battery-powered motor placed in the rear wheel (hub motor). It did not even have pedals, which shows that early designs were more like motorcycles than bicycles.

In 1897, Hosea W. Libbey introduced the concept of two motors placed near the crank. This is similar to what we now call a mid-drive system. These two ideas—hub motors and mid-drive motors—are still the main systems used today.

During this time, electric vehicles were actually seen as a strong option. But battery technology was very weak. Lead-acid batteries were heavy, slow, and had very limited range. Because of this, electric bikes could not compete for long.

## Decline during petrol dominance (1900s – 1970s)

As petrol engines improved, electric bikes and motorcycles quickly fell behind. Petrol bikes were faster, could travel longer distances, and could be refuelled quickly. This made them more practical.

Electric bikes did not disappear completely, but they stayed in very limited use. They were sometimes used during fuel shortages or for short-distance travel. However, they were not widely adopted because batteries were too heavy, the range was very low, and speed was limited.

For many decades, electric two-wheelers remained a small and almost forgotten part of the transport industry.

## Revival attempts and early improvements (1970s – 1980s)

The oil crisis in the 1970s brought attention back to electric vehicles. People started looking for alternatives to petrol. Some companies and engineers began experimenting again with electric bikes. Around this time better battery types like nickel-cadmium were introduced. Japanese companies like Panasonic and Sanyo started working on electric bicycles.

However, even with these improvements, electric bikes were

(mid-1990s), Early electric bikes with better speed and features like regenerative braking.

Even then, adoption was still slow because prices were high and charging systems were not widely available.

## Modern electric bike industry begins (2009 – 2019)

The real modern phase of electric motorcycles started around 2009. New companies focused only on electric vehicles. Zero Motorcycles produced high-performance electric bikes. Battery technology improved quickly during this period. Electric motorcycles became faster and more reliable.

A major moment came in 2019 with the launch of the Harley-Davidson LiveWire. This showed that even traditional motorcycle companies were moving toward electric. At the same time, companies like Energica Motor Company pushed performance further, especially in racing.

## Recent growth and current trends (2020 – present)

Electric bikes have grown very fast in recent years. The COVID-19 pandemic also increased demand, as people looked for safer and cheaper ways to travel. Today, electric two-wheelers include e-bikes for daily commuting, electric scooters for city use, high-performance electric motorcycles, example Energica Ego+ – very powerful, high-speed electric motorcycle, Kawasaki Ninja e-1 – designed for everyday city riding.

The market is expected to keep growing strongly. For example, Europe is projected to sell around 10 million e-bikes per year by 2030.

### KEY TRENDS TODAY

- Better battery range and faster charging
- Smart features like GPS and mobile connectivity
- Growth in urban mobility solutions

still not practical for most users. They were expensive and still had limited performance.

## Lithium-ion and pedelec system (1990s – 2000s)

A big breakthrough came in the 1990s with the development of lithium-ion batteries. These batteries were lighter, more powerful, and lasted longer. This made electric bikes much more practical.

During this time, the pedelec (pedal electric cycle) became popular. In this system, the motor helps only when the rider pedals. Companies like Yamaha and Panasonic played a big role in developing this technology. For example, Peugeot Scoot'Elec

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NOW IN BANGLADESH

# THE EV ECONOMY

Octane cars cost BDT 15–20 per km, while EVs run at BDT 1.5–2.5

E-bike sales rose from 1,776 to 2,561 within January to March 2026

EV import duty stands at 89%

whereas it is more than 127% for ICE

**Electrification Goals**

- State has targeted 30% vehicle electrification by 2030
- Over 500 EVs already registered by BRTA

**Challenges**

- No fiscal support for importing electric vehicles
- Scarcity of public stations forces home charging

## Beyond the fuel pump

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### BRIDGING THE CHARGING DIVIDE

Despite the growing interest, a significant policy gap remains. While the government promotes EV adoption, the physical infrastructure is lagging. Currently, there are very few public fast-charging stations across the country. Most EV owners are forced to rely on home charging, which limits long-distance travel and restricts ownership to those with dedicated parking and electrical provisions.

Furthermore, the duty structure remains a point of contention. While fossil-fuel SUVs face massive taxes, the total tax incidence for

EVs still stands at around 89%. Industry experts argue that for the 30% target to be realistic, the government needs to provide clearer incentives for private charging entrepreneurs and further reduce import duties for entry-level electric cars. Without a unified policy on charging standards and grid management, the transition may remain confined to urban centers.

### A FUTURE BEYOND FUEL

As seen in the recent European markets, where EV sales often surge following petrol price hikes, Bangladesh is at a similar crossroads. This time the transition greatly being economically

resilient rather than just green. The entry of global leaders like BYD and Mercedes-Benz provides the technological depth needed to build trust, but the government must close the infrastructure gap to turn the 2030 vision into a reality.

The silence of an electric motor on a congested Dhaka street is more than just a lack of noise. It is a signal of a country moving toward energy independence. For the Bangladeshi driver, the choice is becoming clear: continue watching the rising digits at the pump or plug into the future. The road ahead is long, yet the silent engines suggest the journey has already begun.