# Global advances in electric vehicle technology and sustainable transport innovations



Contemporary developments in electric vehicle (EV) technology and sustainable transport continue to accelerate globally, as recent reports highlight significant innovations and initiatives across various sectors.

Battery technology is advancing rapidly, with CATL unveiling an upgraded version of its Shenxing battery that promises to deliver 520 kilometres (323 miles) of range from merely five minutes of charging. This leap in performance could potentially set new standards for EV charging times and distance capabilities. Moreover, CATL’s sodium-ion battery, branded as Naxtra, is reportedly ready for commercial use, offering around 200 kilometres of range for hybrid vehicles and up to 500 kilometres for electric vehicles. The company is also working on dual-power batteries designed to achieve a maximum range of 1,500 kilometres on a single charge, signalling further strides in extending EV range capacities.

In terms of vehicle design, Longbow, a British manufacturer inspired by iconic models such as the Lotus Elise and Jaguar E-Type, has introduced the Electric Longbow, touted as the world’s first featherweight EV. Emphasising lightness and agility under the motto 'Celeritas Levitas' (the speed of lightness), Longbow’s latest Speedster model weighs approximately 1,973 pounds and can accelerate to 60 mph in 3.5 seconds, with a WLTP-certified range of 275 miles.

Safety innovations in EV battery technology are also advancing. Hyundai Mobis has introduced a 'pulsating heat pipe' technology, which rapidly cools battery cells to mitigate overheating risks and integrates a fire extinguishing mechanism within the battery assembly. The system is complemented by a sophisticated battery management system (BMS) that continuously monitors temperature, voltage, and pressure data, aiming to pre-empt and prevent potential battery fires.

On the sustainable transport front, France has launched the Zulu 06, its first green hydrogen fuel cell riverboat. Measuring 55 metres in length, this urban distribution vessel is capable of carrying up to 400 tons of goods—equivalent to the load of approximately 50 vans. Equipped with two fuel cells rated at 200 kWh each, the Zulu 06 supports efforts to reduce van traffic in central Paris by shifting freight transport to a zero-emission mode via river shipping.

Urban micromobility continues to gain traction as well. A recent op-ed highlights the transformative potential of electrified micromobility options like e-scooters and e-bikes in tackling traffic congestion and last-mile transportation challenges in cities worldwide. Closely linked to this trend is Seattle’s booming micromobility usage, where ridership across scooter and bikeshare services hit a record 6.3 million rides in 2024—up 28% from the previous year and showing a 76% increase since the first quarter of 2024. This surge is partly driven by increased adoption of e-bikes, which are particularly suited to Seattle's hilly terrain, although expanding micromobility options within city parks has proceeded at a slower pace.

In Cape Verde, an ambitious e-bike expedition saw Prague-based cyclist Richard 'Gaspi' Gasperotti attempt the ascent of Pico do Fogo, the country's highest active volcano standing at 2,829 metres. Starting from the base camp Casa Marisa at 1,620 metres, Gasperotti pushed his e-bike up an additional 400 metres, underlining the increasing recognition of e-bikes as viable clean transport technologies even in challenging environments.

Furthermore, Tallinn has introduced new regulations targeting light vehicles and micromobility rentals, imposing stricter rules on vehicle marking, parking, and speed restrictions to enhance pedestrian safety, especially for vulnerable groups such as children and the elderly. Among the stipulations, rental vehicles must display the company’s name and contact information and incorporate technical solutions that allow enforcement of speed and parking restrictions.

In the automotive sector, Tesla is currently facing challenges in its core markets. Despite growth in overall electric vehicle sales, Tesla’s registrations in regions like Europe, China, and its home state of California have showed declines. Wedbush Securities analyst Dan Ives has attributed part of the brand’s difficulties to the public image of CEO Elon Musk, particularly his political associations and social media conduct, which may be impacting Tesla’s market positioning against increasing competition from other U.S. EV manufacturers.

Finally, on the materials front, a 2024 study led by the University of Texas at Austin has estimated that U.S. coal ash contains approximately 11 million tons of rare earth elements valued at $8.4 billion. This suggests that coal ash waste could constitute an untapped source of critical materials essential for electric vehicles and other clean technologies, representing nearly eight times the national known reserves.

These developments collectively illustrate a dynamic landscape in clean transport technologies, encompassing innovations in battery performance and safety, vehicle design, alternative fuels, urban mobility policies, and resource utilisation.

Source: [Noah Wire Services](https://www.noahwire.com)

## Bibliography

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