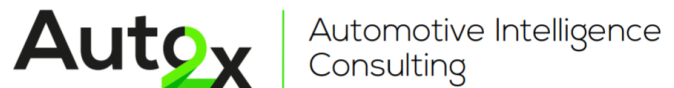


Future of Electric Vehicles, Batteries, Hydrogen & Clean ICE by 2035

Electric Vehicle Batteries and Hydrogen hold a key role in the future of vehicles: zero-emissions and Circular Mobility.

LONDON, UNITED KINGDOM, February 28, 2025 /EINPresswire.com/ -- [Auto2x](#) publishes new study "[Future of Electric Vehicles, Batteries, Hydrogen & Clean ICE by 2035](#)".



Electrification of passenger cars and commercial vehicles will play an important role on the journey towards a carbon neutral society. While battery is taking central stage, hydrogen has the potential to be an important, safe, low-carbon transport fuel, particularly for heavy-duty transport such as trucks, buses and shipping.



Key questions about the evolution of the powertrain mix remain from the removal of government subsidies, the evolution of battery supply chain and the fierce competition among carmakers."

Auto2x

This report examines the impact of technology and market forces to unveil the future of battery and hydrogen mobility.

- Learn about innovative research to tackle technological challenges of cost, energy density, storage and infrastructure;
- Understand the development of regulation and policy which could remove the barrier of developing infrastructure;
- Assess the strategies of players to build strong position in

future mobility.

KEY FINDINGS

1) Electric vehicles are reaching mainstream adoption, but the powertrain mix will still require ICE.

The adoption of Electric cars, BEV (Battery Electric Vehicles), Plug-in Hybrids (PHEV) or Fuel-Cell

Vehicles (FC) is increasing in core car markets, like China, Europe and the US.

However, key questions about the evolution of the powertrain mix remain, such as the impact of the removal of government subsidies in EV penetration, the evolution of battery supply chain and the fierce competition among carmakers.

This report analyses the technological innovations in [batteries](#), hydrogen and fuel cells to help innovators stay ahead of the technological curve.

2) Batteries become the cornerstone of new business models in electrification.

Battery-as-a-Service, Battery-Swapping, emerge as new revenue pools for automotive players.

3) Web3 and Blockchain applications emerge to support transparency and traceability. Everledger created “EV battery digital passports” with Ford to track batteries across their lifecycle.

Volvo and Jaguar Land Rover are among the carmakers who have already started digitalizing their supply chain using blockchain to source cobalt for EV battery cells.

4) Environmental regulation for Circular battery economy drives recycling and 2nd life applications. With the proliferation of electric vehicles, regulations are trying to tackle their environmental management.

China has recently published legislation obliging battery and EV manufacturers to recycle exhausted EV batteries at the end of their first life.

In December 2022, the US government’s Bipartisan Infrastructure Law Funding announced support for the reintegration of used batteries through recycling and reusing to meet the increasing supply chain demands and reduce dependence on imports for critical materials and components;

Europe has introduced Circular Battery mandates with the EU Battery Directive.

Moving from a linear to a circular value chain can improve both the environmental and the economic footprint of batteries by getting more out of them while in use, and by harvesting their end-of-life value.

A plethora of technological innovations in electric vehicle batteries, business models for 2nd life and recyclability, and industry collaboration will be crucial for the shift from Low to Full Circular Mobility.

5) The race to replace lithium-ion batteries is on to solve range anxiety, fast-charging and

affordability

Researchers in the US, Japan, China and the EU are focused on several alternatives which may not be available for more than a decade. Tesla, Ford and VW see lithium-iron-phosphate (LFP) batteries as a cheaper alternative to cobalt as most of the world's cobalt reserves are located in the Congo, where the mining sector is associated with human rights violations. LFPs already play a dominant role in China's battery EV market which makes them the primary choice in the energy storage sector until at least 2030.

CATL unveiled its first-generation sodium-ion battery. Sodium is abundant, less expensive and the batteries are non-flammable, so CATL plans to ramp up production by 2023.

6) Start-ups aim at solving the technological challenges of EV batteries

Three market forces are driving zero-emission powertrains: regulations, innovation in batteries and fuel cells and investments in Electrification, EV Charging & Hydrogen Mobility.

Early-stage funding of Automotive start-ups shrunk from \$12.2 Billion in 2021 to \$10.9 Billion in 2022 and just \$1.5 Billion in Q1 2023. Early-stage funding, which includes Pre-Seed, Seed, A and B Series, amounted to \$24 Billion between Q1 2021 & Q1 2023.

Electric vehicles accounted for most of the funding between 2021 and Q1-2023 (\$12B), followed by Mobility business models (\$6B) and autonomous vehicles (\$6B).

IonQ using quantum computing for material simulation for the development of EV batteries;

Some prominent startups working on Solid State Batteries, such as Solid Power, QuantumScape are located in the USA and they have partnerships with major carmakers such as Hyundai.

7) Interviews with Innovators: Actify's Program Management Software

Carmakers are introducing aggressive roadmaps for new electric vehicles to capture the rising market. According to automotive industry data, the number of programs launched by global carmakers will increase by 50% to 65% over the next three years. There is a huge wave coming at the suppliers who need to digitalize their Program Management functions to support the complexity and scalability of vehicle and parts manufacturing.

Auto2x spoke to Dave Opsahl the CEO of Actify, to understand how Actify's software management can help suppliers overcome resource constraints and support the fast transition to electrified mobility and networked driving.

"We can automate a lot of the activity of launching a program, which today all happens manually. Our software helps suppliers communicate with their customers about Requests for Quotations

(RFQ) and build. We make it possible for them to take the design information and be able to understand what's the item at issue", says Dave Opsahl". Learn more here.

8) New battery and hydrogen hotspots emerge

Even though China dominates battery manufacturing, Europe, the US and Korea are competing to develop stronger domestic capabilities and limit their dependence on China.

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