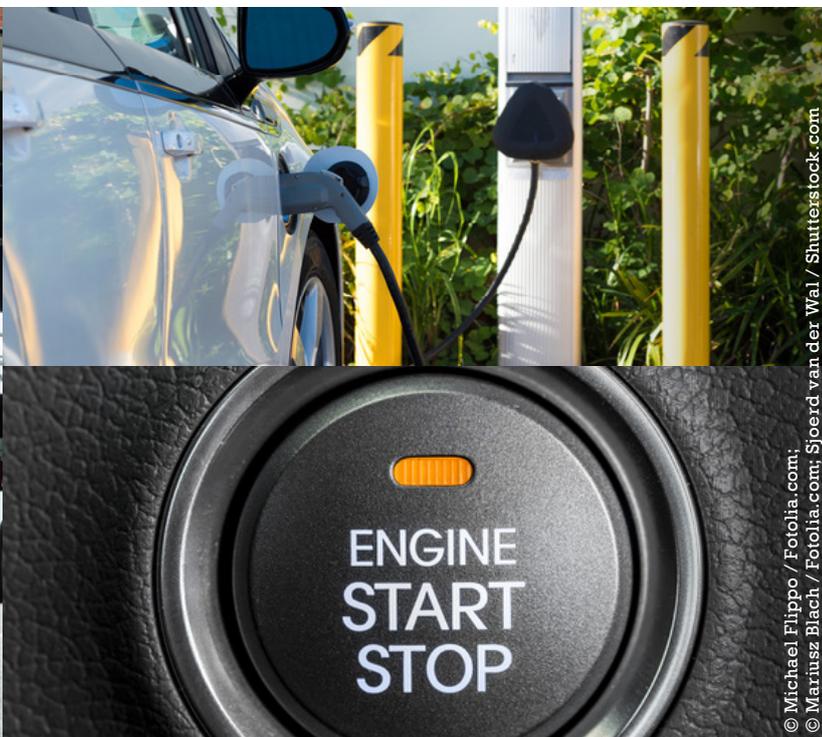




NEWS EUROBAT

THE QUARTERLY NEWSLETTER OF THE ASSOCIATION OF EUROPEAN AUTOMOTIVE AND INDUSTRIAL BATTERY MANUFACTURERS



Batteries – the key to hybridisation and electrification

The future of mobility and transport is closely connected to battery technologies. The availability of fossil fuels as natural resources is limited. To mitigate climate change, the European Union wants to reduce CO₂ emissions in the transport sector by 60% and eliminate the use of fossil fuels in cars by 2050. EUROBAT, the European Association for automotive and industrial batteries, supports these targets.

We hope that with this newsletter our sector can provide useful background information to EU policy debates related to the decarbonisation of transport, integration of electric vehicles with the grid and the growth of renewable energy. We are convinced that the hybridisation and electrification of transport must find sufficient recognition in all these debates.

The shift to hybridisation and electrification of transport could bring considerable opportunities in terms of job creation, economic growth, energy security, health and environmental protection. According to the report [“Fuelling Europe’s future”](#), the decarbonisation of European fleet could create 1.1 million net jobs by 2030 and 2.4 million by 2050. The shift would also bring relevant environmental benefits: up to 93% CO₂ emissions reduction, 95% of NO_x and 95% of Particulates by 2050. The deployment of electric and hybrid vehicles would allow a better integration of renewables into the grid: EV batteries can reduce the curtailment of renewable generation by absorbing excess energy and offer additional value such as through peak shaving, flexibility, self-consumption, as well as ancillary and balancing services.



Batteries: an overview

Among a portfolio of technologies used for road transport, [vehicles based on a wide range of different concepts for hybrid and electric powertrains](#) are the most promising option for achieving the EU targets: Micro Hybrid Electric Vehicles (HEVs) use start-stop systems to lower emissions and fuel consumption by 5–10%: the engine turns off when the vehicle stops and starts automatically when the car is powered. Mild Hybrid Vehicles include the storage and reuse of braking energy. Full Hybrid Electric Vehicles use the electrical storage system for relatively short distances, and Plug-in HEVs (PHEVs) combine the advantages of an electrical vehicle with those of a vehicle using a combustion engine. Electric Vehicles (EVs), finally, are operated with electrical power only.

Different demands on batteries

Each vehicle type places a different set of demands on the installed battery – in terms of performance, lifetime, safety and cost. As presented in the [EUROBAT E-Mobility Battery R&D Roadmap 2030](#) there are three battery technologies having the greatest potential for the next decade:

1. [Advanced lead-based batteries](#) are used in start-stop vehicles and micro-hybrid ve-

hicles. Research and innovation should improve performance and lower cost for these specific vehicle markets. Micro-hybrid vehicles will also begin to provide “stop-in-motion” functionality, where the engine is turned off at higher speeds whenever acceleration is not needed.

2. [Lithium-ion batteries](#) are suitable for electric vehicles and all types of hybrid vehicles. Overall the target for R&D should be focused on increasing of the energy/power density and lowering the costs, with different performance priorities for each application. EUROBAT members are convinced that it is still possible for the EU to establish a competitive advantage in the production of Li-ion battery cells and systems.
3. [Sodium-nickel chloride batteries](#) are deployed in pure electric and plug-in hybrid configuration. This technology is mostly suitable for heavy duty and energy oriented applications. On-going projects should be focused on the improvement of the production process, on the systems integration and on lowering the costs.

Further public research needed

Batteries are at the heart of the move towards a decarbonisation of transport sector, further research is needed to rapidly advance along this path. Time lasting incentives schemes and funded research projects for fleets deployed by utilities and advanced public transport will help to create an initial level of demand. Hybridisation and electrification of private and public transport are absolutely needed to meet EU emissions targets. Additional efforts are required from a R&D point of view to realise this important long term change for passenger cars, buses and commercial vehicles.

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Responsible according to the press law: Alfons Westgeest, EUROBAT Executive Director

Telephone: + 32 2 761 16 53

Website: www.eurobat.org | **email:** eurobat@eurobat.org

Twitter: [eurobat_org](https://twitter.com/eurobat_org) | **LinkedIn:** EUROBAT Association