

Sustainable Mobility

6. How is the player Ecosystem evolving: Leaders vs. Followers

7. Which markets present the strongest potential to build leading Circularity Hubs

CIRCULARITY IS MOBILITY'S PATHWAY TO SUSTAINABILITY, GROWTH AND NEW CUSTOMER VALUE

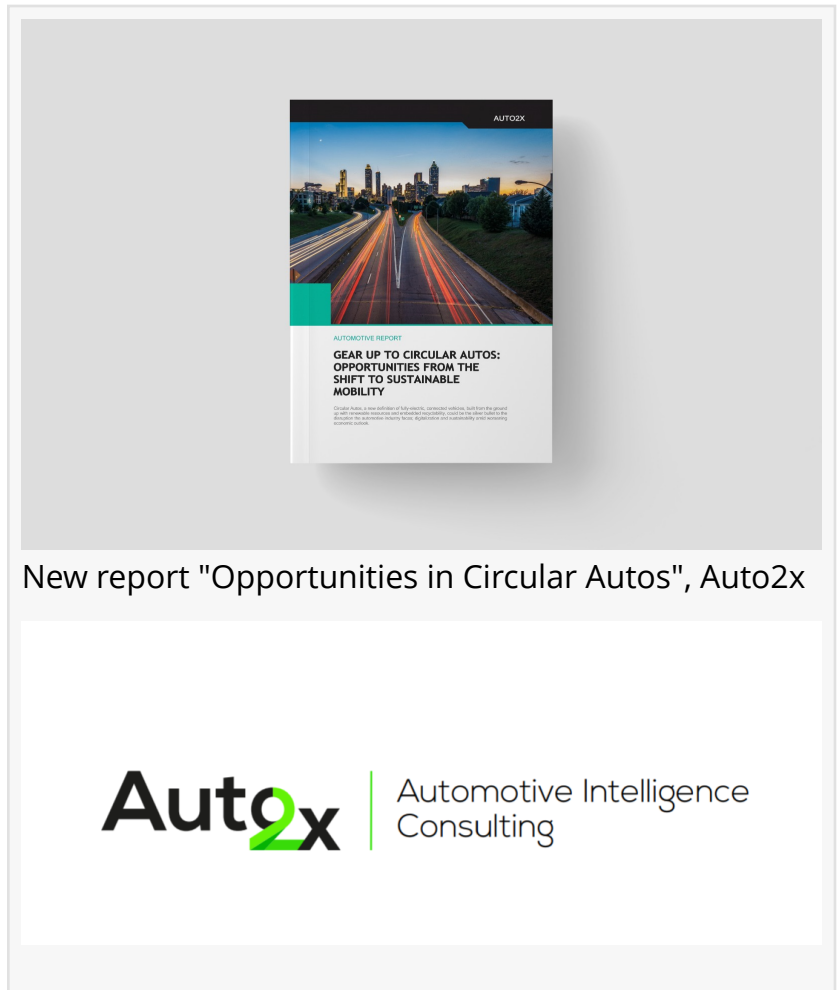
Auto2x assesses that this new generation of vehicles could accelerate the roadmaps to carbon neutrality and sustainability, amid the ripple effects of the worsening economic outlook. This is attributed to a series of Circular processes embedded in their production, lifetime use and end-of-life.

Circular Autos can tackle the need for their energy decarbonization, materials' circularity and optimization of the vehicle utilization and lifetime by combining a number of processes.

- Optimized designed tailored to the mobility application, e.g. BYD's D1 purpose-made vehicle for ride-hailing, or KAUST's AI framework for the optimization of fuel design;
- Production with renewable and carbon-neutral resources, e.g. green steel and aluminum;
- Fitment of zero-emission powertrains, mainly 100% electric or hydrogen fuel cells, such as in the Tesla Model 3 and BMW i4 which top electric efficiency ratings according to reports;
- Optimized EV charging from renewable resources leveraging blockchain and digital identities, such as BMW's digital passport for EV charging with renewable resources;
- Advanced electric architectures and connectivity to remain always up to date, such as Hyundai's E-GMP which combines a multi-charging system, large-capacity battery system, and flexible use of space;
- Recyclability for second-life of battery and other components, e.g. Posh Robotics' battery recycling processes leveraging computer vision.

THE SHIFT TO SUSTAINABILITY STILL FACES LACK OF POLICY HARMONIZATION AND TECHNO-COMMERCIAL CHALLENGES

Circularity and sustainability are becoming core parts of the strategic direction of carmakers and



New report "Opportunities in Circular Autos", Auto2x

Auto2x | Automotive Intelligence Consulting

automotive suppliers due to emission regulations and climate policies, competition and changing consumer needs. Many passenger car brands are already fully-electric, such as Tesla. Still, their shift to climate neutrality is underway, with Tesla not making a commitment yet while Polestar has set 2040 as the goal.

The VW Group is targeting net carbon neutrality by 2050 with a combination of strategies that include a fully-electric car mix, off-setting unavoidable emissions and many more. The VW Group expects its BEV mix to account for 20-25% of sales by 2025, amounting to 2-3 million units, of which VW will amount to circa 1 million.

The latest update of Renault Group's Renaulution plan will include creating a 360° circular economy company from the closed loop in materials to battery recycling, called "The Future Is NEUTRAL", an industry-first, according to the French carmaker. "Renault Group intends to position itself faster and stronger than competition on the new automotive value chains: EV, software, new mobility and circular economy." Luca de Meo, CEO

BMW aims at a 1/3 CO2 reduction across its value chain by 2030. The Group wants to become climate-neutral by 2050. Polestar and Volvo have set 2040 as their net-zero commitment target. Hyundai and KIA have set 2045. Ford, VW, Mazda, Honda, Nissan, Toyota and Isuzu have set 2050.

Regulations are the biggest driver of transformation to Circular Autos. CO2 fleet compliance and targets for PHEV/BEV sales are increasing the cost of compliance of Internal Combustion Engines and driving the introduction of PHEVs and BEVs. The lack of regulatory harmonization, the absence of global cooperation to develop common standards, and consumer awareness are roadblocks to overcome.

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WHO IS THIS STUDY FOR?

- R&D
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