

AUTOMOTIVE PLASTICS & POLYMER COMPOSITES

A ROADMAP FOR FUTURE MOBILITY

> *Advanced plastics and polymer composites are essential to the personal mobility REVOLUTION*

The revolution underway in personal mobility is driving automakers to rapidly invent mobility solutions suited to an **autonomous, connected, electrified, and environmentally responsible automotive future**. To do so, automotive designers need new material solutions that only advanced plastics and polymer composites can provide.

> *Our new roadmap outlines an updated strategy that will equip automakers with the materials solutions they need*

Led by the American Chemistry Council (ACC) Plastics Division, *Automotive Plastics & Polymer Composites: A Roadmap for Future Mobility* describes the megatrends shaping the future of automotive design and provides an industry-led perspective on the research, technology, and workforce development necessary to ensure automakers have access to the advanced plastics and polymer composites they need to transform mobility in the next five years and beyond.

What's driving the PERSONAL MOBILITY REVOLUTION?

Convergence of IT & Auto industries



Improved battery technology



Increasingly urban populations



Emergence of alternatives to personal vehicles



Rise in automotive-buying populations in growing economies



Proliferation of artificial intelligence



Growing global environmental concerns



Modernization of regulations and standards to enable self-driving vehicles



Implementation of fuel economy standards encouraging automotive lightweighting



The ACCESS Framework

The technological, cultural, and economic megatrends driving the personal mobility revolution require new ways of thinking about automotive innovation. This roadmap offers a new framework for capturing the opportunities created by today’s automotive transformation.

AUTONOMY

Advanced driver-assist safety technologies and other technological breakthroughs are helping to gradually relieve human drivers from controlling passenger vehicles.

CONNECTIVITY

Future vehicles will offer greater levels of connectivity and communications, driven not only by in-vehicle comfort and convenience but also by safety considerations.

CIRCULARITY

Principles of a circular economy emphasize recovering materials at the end of their usable life, refurbishing and repairing materials to extend product lifecycles, and remanufacturing and reusing them in new products.

ELECTRIFICATION

Electric vehicle (EV) sales are accelerating and projected to represent between 30% and 50% of worldwide vehicle sales by 2040, up from just 1% of worldwide vehicle sales in 2016.

SHARED MOBILITY

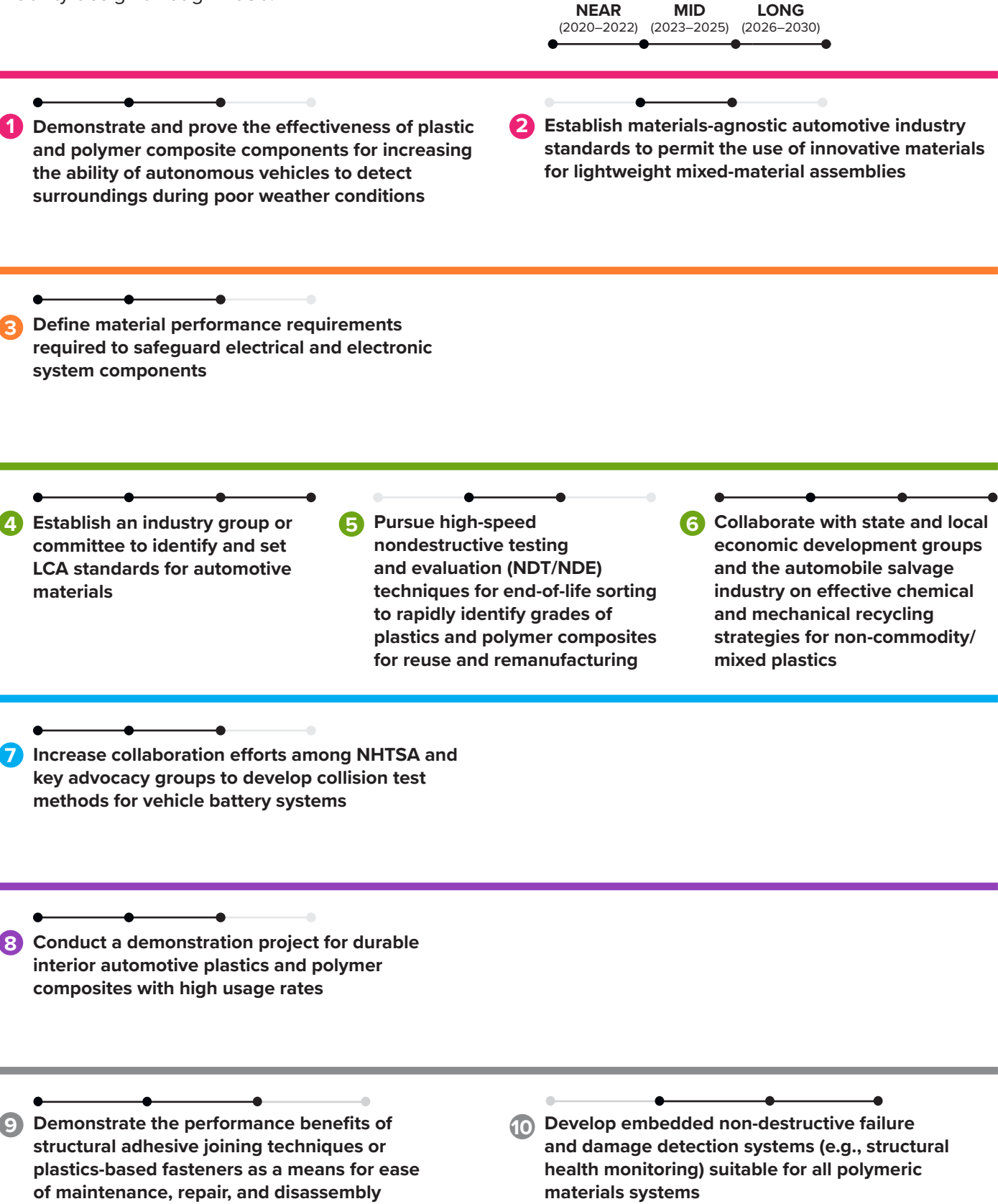
Adoption of ridesharing has grown from 15% of U.S. consumers having used ridesharing in 2015 to as many as 43% of U.S. consumers in 2018, helping to reduce travel costs and environmental impact of passenger vehicles.

SUSTAINABILITY

Automakers are working to achieve sustainable automotive design that reduces environmental impacts and improves the efficiency of products throughout their lifecycle.

Top 10 Priority Collaborative Activities

The advanced plastics and polymer composites industry will work together and with automotive partners, government agencies, and academic researchers to conduct pre-competitive activities that will significantly accelerate the advancement of plastics and polymer composites and enable their integration into future mobility design through 2030.



The automotive plastics and polymer composites industry is ready to work with automakers to accelerate progress toward safe, modern mobility solutions

With the ACC Plastics Division as a steward, industry partners—automotive advanced plastics and polymer composites providers, automotive OEMs, and suppliers—as well as academic and national laboratory researchers and government agencies will all work together to conduct the activities and lead the initiatives outlined in the roadmap. Leveraging the collective, cross-sector expertise and resources of these mobility stakeholders will unleash the full potential of advanced plastics and polymer composites and create the breakthrough innovations needed to realize more affordable, accessible, sustainable, and environmentally responsible mobility solutions for all.

**To get involved in this roadmap's activities, contact
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