
# Tackling the future through partnership and adaptability

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*The world at large is undergoing massive change, and there are significant implications for the lubricants and specialty chemicals industries. As global markets seek to decarbonise and adapt to climate change, all lubricant industry stakeholders will have a significant role to play.*

To say that the world as we know it is changing may be to state the obvious. But today, we are truly on a precipice—numerous megatrends are converging that will drive revolutionary and transformative change throughout the global lubricants and additives industries.

Population growth, urbanisation, and demographic and social shifts are driving change in the way we conceive of mobility on a fundamental level. Connected, autonomous, shared and electric technologies—sometimes referred to collectively as CASE technologies—and other breakthroughs are likely to upend the entire concept of the automobile in the near future. Simultaneously, the world's continued decarbonisation push and shifting economic forces are creating new requirements for the specialty chemicals and lubricants industry.

While additives and lubricant businesses have certainly contributed to sustainability in many ways, industry stakeholders should expect new challenges and opportunities in the years ahead.

**The growing impact of decarbonisation efforts**

One of the strongest indicators of the way mobility is changing are proposed—and in some instances already effective—bans on the fossil-fuel-powered internal combustion engine (ICE). For example, a ban on ICE-powered cars is intended to be one of the centerpieces of the European Union's ambitious plan to cut its emissions to net zero by 2050. The law envisions a total ban on the sale of new diesel and gasoline cars by 2035. The European Union argues that the deadline is necessary because the average car's life span is around 15 years—to get a fleet that produces no carbon pollution by 2050, sales of ICE-powered cars must end by 2035.

In the United States, the California Air Resources Board (CARB) has recently finalised a rule to phase out the sale of new diesel- or gas-powered cars in the state by 2035. The rule will require 35% of new cars, SUVs and small trucks sold to be zero-emissions starting in 2026, increasing to 68% in 2030 and 100% in 2035. In 2022, zero-emissions vehicles made up about 16% of new cars sold in California. The rule also sets durability, warranty and other provisions on zero-emissions vehicles.

Corresponding to these moves, original equipment manufacturer exploration into new propulsion sources has accelerated in recent years. Most visible of those sources are electrified vehicles, which have grabbed headlines of late, especially post-pandemic. But several other technologies are also on the table including hybrid, compressed-natural-gas and hydrogen-powered transport.

And that's only on the road. Consider that The International Maritime Organization (IMO) recently set a target to reduce the carbon intensity of international shipping by at least 40% by 2030 and will seek to achieve a reduction of at least 50% by 2050, compared to levels in 2008. As these goals are pursued, it's anticipated that alternative fuels will see steadily rising adoption. Biofuels will be attractive because they can be used as a drop-in option—meaning they can help reduce carbon dioxide emissions with limited hardware investment needed for operators. Methanol, liquid natural gas (LNG) and ammonia—truly a new frontier for marine applications—are expected to make gains, too.

The result of these efforts for additives and lubricants businesses? Change.

The lubricants industry will be required to adapt their products to the operational conditions of these new propulsion methods. Hybrid powertrains, for example, have different demands of the lubricant than traditional ICE vehicles, requiring formulation tweaks that can help optimise different performance characteristics. In ships, methanol and LNG burn at higher temperatures, requiring the lubricant to maintain greater thermal stability to prevent premature degradation. These are just some of the ways new applications will impact our products and services.

Decarbonization will also have tremendous impact on lubricants' myriad applications and how manufacturers formulate products. If the additives industry is to decarbonise, chemical raw materials will need to be sourced from more than just refineries as new technologies and suppliers come to fruition. The same is true of base oils. Subsequently, we can expect new players in the evolving lubricant value chain.

**Forging Ahead**

There is reason for confidence. The lubricants and specialty chemicals industries have been successful in driving sustainability initiatives throughout history and are actively supporting a cleaner future. Some of the ways we're doing it include:

- *Enhancing industrial energy efficiency*. Today's high-performance fluids have the potential to improve the efficiency, response time and productivity of hydraulic and other industrial machinery.
- *Supporting shipping decarbonisation*. In addition to enabling new fuel technologies, high-performance marine lubricants can help improve deposit control and contribute to overall emissions reduction.
- *Enhancing fuel efficiency*. Engine oils not only enable long-term protection and can contribute to emissions control, but lower-viscosity formulations increasingly have the potential to deliver real fuel economy gains within both the passenger car and heavy-duty diesel markets.
- Enabling future mobility. Lubricants tailored to the needs of electrified vehicles will be increasingly important, and newer fluid technology can support more effective battery thermal management.

To succeed, we will need to strengthen and continue those efforts—collectively, proactively and with intention. The future of mobility is not set in stone. The specialty chemicals and lubricants industry must set a vision and drive toward it. We need to lead, lest other industries define our future for us.

This shared vision won't come together overnight. It will take time as there are many considerations for how we shape it, and we will need to answer several questions. *How will the availability of raw materials needed to enable the green transition impact local supply chains? How will population growth in the developing world affect supply and demand? How will businesses adapt to significant needs for diversification from region to region?*

As an industry, we need to join together to seize the opportunities that are in front of us and answer these and other critical questions, those answers will be vital to our success. Continued partnership throughout the value chain is vital as we move toward the future of mobility and the lubricants industry. The strength of our industry and our ability to solve complex challenges come from our ability to collaborate effectively. Lubrizol are looking forward to working with our partners as we navigate the new landscape.

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