Recent policy changes to mileage standards affecting light-duty vehicles in the United States have resulted in increased uncertainty for the automobile industry. At the same time, electric vehicles are growing in popularity and penetration is expected to substantially grow over the next decade. The focus for this month’s EM is the emissions trajectory of the light-duty vehicle sector.
Are you in the market for a new vehicle? A look around the local auto mall may have your head spinning with options. While many Americans are enamored with SUVs and pick-up trucks, the popularity of low- and zero-emitting vehicles has grown substantially over the past decade. According to the 2019 Electric Vehicle Outlook by Bloomberg New Energy Finance (https://about.bnef.com/electric-vehicle-outlook/), battery prices are expected to continue to fall dramatically over the next few years, which may help zero-emitting plug-in electric vehicles reach price parity with internal combustion engine vehicles by the mid-2020s.

While low-emitting technology options continue to expand, recent policy changes leave a great deal of regulatory uncertainty for the automobile industry. In 2012, aggressive light-duty vehicle (LDV) emissions and fuel economy targets were established for model-years 2017 through 2025. However, the U.S. Environmental Protection Agency (EPA) and the U.S. National Highway Traffic Safety Administration (NHTSA) recently proposed to freeze targets at 2020 levels through 2026 and withdrew California's waiver to set its own greenhouse gas emissions standards and zero-emitting vehicles mandates.

In this issue, we consider these and other drivers impacting the auto industry as we examine what's ahead for LDV emissions and regulations.

In the first article, Chris Frey and Michael Walsh discuss several factors that could impact emissions from LDVs, both domestically and internationally, particularly emissions of carbon dioxide. While LDVs continue to be more efficient, trends in vehicle preference toward SUVs and increasing vehicle miles traveled could overwhelm these efficiency gains. Domestic and international policy will be important for adoption of low-emission technologies and continued emission reductions from LDVs.

Next, T.J. Wallington, et al. with Ford Motor Company provide an historical overview of vehicle emissions trends, discussing the significant reductions in emissions of pollutants such as nitrogen oxides and carbon monoxide that have so far been achieved. Further reductions in these pollutants from LDVs will likely be dependent upon addressing emissions from high emitters that are on the road. As zero-emission vehicles gain market share, the emissions footprint from these vehicles, including carbon dioxide, will be dependent upon upstream emissions from the electricity sector.

Gary Bishop discusses research conducted by the University of Denver, using data collected recently in Denver, Chicago, and Los Angeles, showing that a small number of vehicles are responsible for a large portion of emissions. His article highlights the importance of focusing on addressing high emitters to achieve further emission reductions from the transportation sector.

In the final article, Alberto Ayala with the Sacramento Metropolitan Air Quality Management District provides a critical perspective on how policy changes, such as the Safer, Affordable, Fuel-Efficient (SAFE) Vehicles Rule, present challenges for states like California that have areas that are struggling to meet U.S. National Ambient Air Quality Standards. California emissions standards have been a driver for zero-emission vehicle technology development and the state is expected to continue to seek ways to force technology solutions to reduce emissions from the transportation sector.