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16. Abstract

The changes taking place in the global automotive industry related to alternative powertrains and fuels are affecting each country or region differently. Each country or region has its own policies in place to monitor and manage vehicle fuel consumption and emissions. Countries or regions also have different numbers of new vehicles sold annually and the total numbers of vehicles in their fleets. This analysis looks at the current and future direction of alternative powertrains/fuels across four developed economies (United States, Western Europe, Japan, and South Korea) and four developing economies (Brazil, Russia, India, and China) in order to measure the impact of increasing the number of alternative powertrains/fuels in their fleets. In particular, the analysis looks at the how much of each country's fleet will turn over to vehicles based only on alternative powertrains/fuels by 2050 by introducing three different alternative powertrain/fuel models (less aggressive, moderately aggressive, and very aggressive). A less aggressive approach will yield fleet turnover rates of 60 percent or more for most countries, a moderately aggressive approach will yield fleet turnover rates of over 80 percent for most countries, and a very aggressive approach will yield fleet turnover rates of nearly 90 percent or more for most countries.

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