

Fuel economy of new light-duty vehicles - 2005 to 2013

Key Findings

1. Average fuel economy improved 2.0% per year globally between 2005 and 2013.

This annual improvement rate represents about two thirds of the 3.1% improvement now needed per year to reach the GFEI target of a 50% reduction in the fuel economy of all new cars globally by 2030.

2. The rate of fuel economy improvement has been weaker in non-OECD economies.

OECD countries achieved a 2.6% improvement in fuel economy between 2005 and 2013, compared with a 0.2% improvement in non-OECD countries.

3. The global average rate of fuel economy improvement has been slowing.

The average rate was 1.6% in 2012-13, compared with an average rate of 2.3% between 2005 and 2008 and 1.9% from 2008 to 2011. This is mainly due of the growing importance of non-OECD markets for new vehicle registrations

4. The relative share of passenger car markets regulated by fuel economy policies decreased from 2005 to 2013, although there are signs this is changing.

Brazil (2012) implemented fiscal and regulatory instruments capable to reduce the average fuel consumption of vehicles, while Mexico (2013), India and Saudi Arabia (2014) introduced fuel economy standards for passenger light-duty vehicles.



Fuel economy evolution compared to GFEI target

		2005	2008	2011	2013	2030
OECD average	average fuel economy (Lge/100km)	8.6	7.9	7.3	6.9	
	annual improvement rate (% per year)	-2.7%		-2.6%		
Non-OECD average	average fuel economy (Lge/100km)	7.3	7.4	7.3	7.2	
	annual improvement rate (% per year)	0.5%		-0.4%		
Global average	average fuel economy (Lge/100km)	8.3	7.7	7.3	7.1	
	annual improvement rate (% per year)	-2.3%		-1.9%		
GFEI target	average fuel economy (Lge/100km)	8.3				4.2
	required annual improvement rate (% per year)	2005 base year	-2.7%			
		2012 base year	-3.1%			

Note - The 26 countries included in this analysis represent more than 80% of worldwide sales of light duty vehicles in 2013.

Action needed:

- a) Scale up the market coverage of fuel economy regulations;
- b) Set strengthened fuel economy improvement targets for the 2015-2030 period (especially in the non-OECD);
- c) monitor the stringency of fuel economy improvement targets already in place;
- d) keep monitoring the developments of fuel economy worldwide.

Background

1. Non-OECD markets are increasingly important for new vehicle registrations.

- 2013 was a record year in terms of new light-duty vehicle registrations, with almost 63 million passenger cars sold globally.
- Sales of passenger cars have been higher in non-OECD countries than the OECD since 2011.

2. Average levels of fuel economy are now better in OECD rather than non-OECD markets, although there is a significant range between countries.

- In 2011 the average levels were the same in OECD and non-OECD markets (7.3 Lge/100km), but in 2013 the OECD average became lower than the non-OECD average (6.9 Lge/100km compared with 7.2 Lge/100km).
- The range of average fuel economy values is much wider in OECD countries than in non-OECD countries. The OECD region has both the most and least efficient markets and contains two main clusters, either well below (Europe, Japan) or well above (North America, Australia) the regional average.

3. Globally, there is increasingly a trend towards medium sized vehicles.

- In non-OECD countries the share of large vehicles is still significantly lower than within the OECD. Increasing incomes are leading to a shift from small to medium sized vehicles.
- Until 2010, the OECD market showed a trend towards smaller vehicles. The latest analysis shows a stabilization of sales shares of large vehicles, a growth in the medium-sized vehicle segment and a contraction of the small vehicle segment.
- Engines below 1.2 litres are slowly growing in OECD regions as engine downsizing on small vehicle segments is gaining importance. In non-OECD, the same engine size category is sharply decreasing as car buyers are increasingly opting for larger and more powerful vehicles.

4. Fuel economy improvements in large vehicles have been more significant than in small ones. Large vehicles are usually driven the most.

- Overall, the fuel economy of the large vehicle segment improved the most, from 10.2 Lge/100km in 2005 to 8.4 Lge/100km in 2013.

5. Globally, hybrid cars are the most efficient, followed by diesel vehicles. However, the gap between diesel and gasoline cars is decreasing.

- Hybrid vehicles show an average fuel consumption of 4Lge/100km, compared with around 6Lge/100km for diesel and 7.5Lge/100km for Gasoline.
- The gap between diesel and gasoline cars is getting smaller because of improved efficiency, and because diesel engines are increasingly being used on premium cars.



Notes

The Global Fuel Economy Initiative (GFEI) previously published reports in 2011 (using data from 2005-8) and 2013 (using data from (2005-11)). The analysis in GFEI's latest update in 2014 adds two more years (2012 and 2013) and three more countries (Macedonia, Peru and the Philippines).

The analysis also includes methodological revisions, the most significant of which is a normalisation of all fuel economy data to the NEDC test cycle in order to deliver more robust and internationally comparable results.

¹ OICA (2014), World Motor Vehicle Sales, Passenger cars, <http://www.oica.net/wpcontent/uploads//pc-sales-2013-June-2014.xlsx>

² GFEI (2011) International Comparison of Light-Duty Vehicle Fuel Economy and Related Characteristics, IEA, Paris, http://www.globalfueleconomy.org/Documents/Publications/wp5_iaea_fuel_Economy_report.pdf

³ GFEI (2013), International comparison of light-duty vehicle fuel economy: An update using 2010 and 2011 new registration data www.globalfueleconomy.org/Documents/Publications/wp8_international_comparison.pdf

⁴ GFEI (2014) International comparison of light-duty vehicle fuel economy: Evolution over 8 years from 2005 to 2013