

United Kingdom

Country spotlight

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Population (million) (World Bank, 2016a):	65.1
Urban population (% of total) (World Bank, 2016b):	83%
GDP per capita (2014 USD/year) (World Bank, 2016c):	43 700
Average price gasoline and diesel (USD cent per L, 2014) (GIZ, 2015):	192; 199
Fuel tax class (2014) (GIZ, 2015):	taxed petroleum fuels

In 2015, about 3 million LDVs were sold in the United Kingdom (IHS Markit, 2016). The LDV stock totalled nearly 30 million cars (IEA, 2016a). LDV ownership amounted to 0.521 LDVs per capita. Voluntary CO₂ emission standards were first introduced in the European Union in 1998, and they became mandatory in 2009. The 2015 target of 130 g CO₂/km for passenger cars was met in advance (EEA, 2016). By 2021, CO₂ emissions of passenger cars are required to meet 95 g CO₂/km (based on NEDC). LCVs are required to attain 147 g CO₂/km (based on NEDC) (TransportPolicy, 2016).

Passenger vehicles that emit less than 100 g CO₂/km are not subject to annual circulation tax. Other advanced powertrains are subject to reduced tax rates (ACEA, 2016). Business BEVs are not eligible to pay company vehicle tax for vehicles registered after 2010. All vehicles below 50 g CO₂/km only have to pay 5% company tax, starting from 2015. Furthermore, the United Kingdom initiated a plug-in car grant in 2011, providing a 25% grant (up to GBP 5 000 or USD 6 150) for vehicles emitting less than 75 g CO₂/km (UK Government, 2016).

Market profile and vehicle characteristics

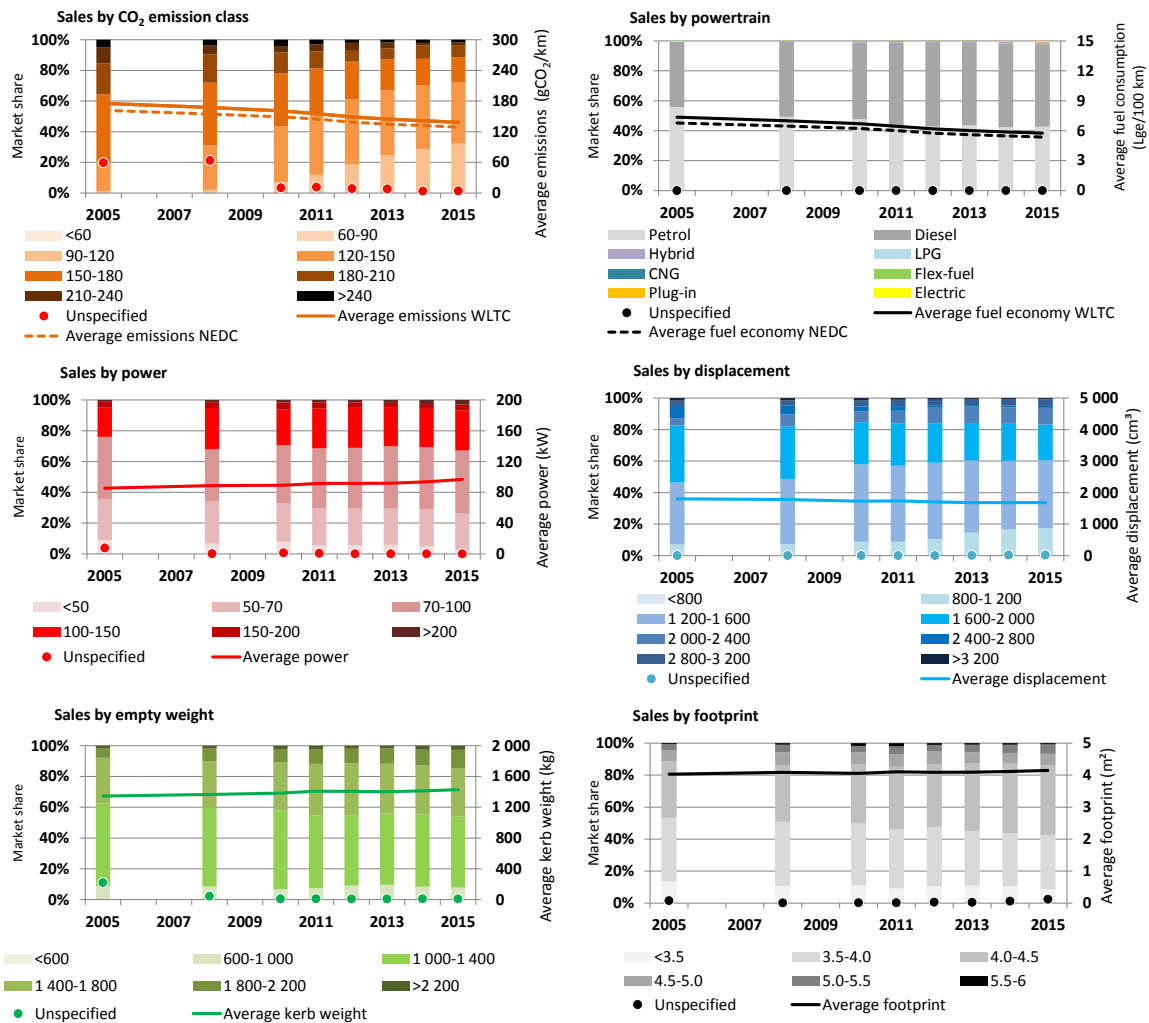
The UK LDV market grew by almost 50% in five years to more than 3 million newly registered LDVs between 2010 and 2015 (IHS Markit, 2016). Growth in domestic production was more modest, totalling 1.7 million vehicles in 2015, making it the thirteenth largest LDV producer in the world (OICA, 2016). European and US OEMs were most popular, holding more than 60% of the market share.

The United Kingdom experienced a clear downward trend in average LDV CO₂ emissions between 2005 and 2015 (Figure 1). After 2010, the market share of LDVs that emit 90-120 g CO₂/km grew almost fivefold, while that of vehicles emitting more than 150 g CO₂/km halved during the same period. Similar to many European countries, diesels became the dominant powertrain in the late 2000s. After 2011, around 55% of new vehicles sold were diesels, compared with 45% for gasoline-fuelled LDVs. More advanced powertrains represented less than 5% of the UK LDV market in 2015, although plug-in LDVs tripled their share in the three latest years. Improvement in average fuel economy slowed between 2013 and 2015 compared with the three previous years.

During the period between 2005 and 2015, average power of new LDVs rose by almost 15% to 97 kW in 2015. At the same time, average displacement continued to fall between 2008 and 2015. Engines with a displacement between 1.2 and 2.0 L lost market share, while smaller and larger engines both became more popular. LDVs with engines between 0.8 L and 1.2 L doubled in market share.

After a dip in average weight between 2011 and 2013, British LDVs became slightly heavier in 2014 and 2015. New LDVs in the UK are 6% heavier than new French LDVs, but 3% lighter than German ones. The average footprint of newly registered LDVs experienced a similar trend, growing slowly between 2013 and 2015. This is most likely caused by increased popularity of small and medium SUVs.

Figure 1 • LDV market by g CO₂/km, powertrain, power, displacement, weight and footprint, United Kingdom, 2005-15



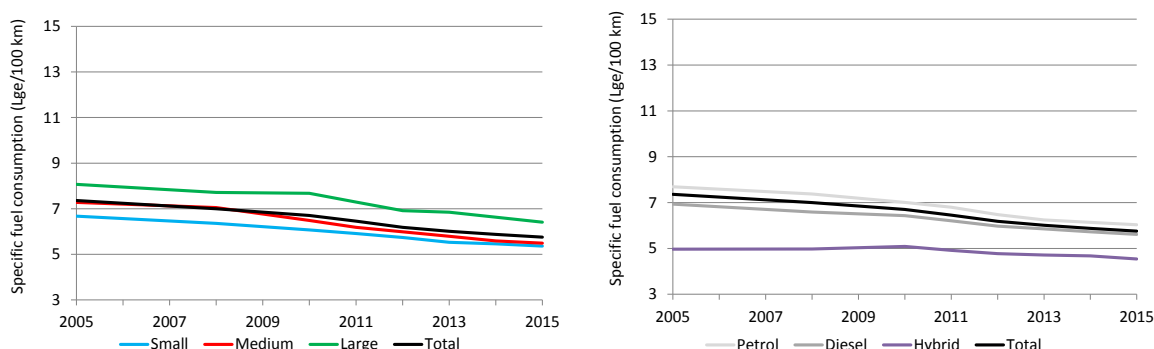
Source: IEA elaboration and enhancement for broader coverage of IHS Markit database.

Analysis of fuel economy trends

All segments experienced continuous average fuel economy improvement, with an uneven pattern in the large segment (Figure 2, left). Small and medium vehicles converged to less than 2% difference in 2015.

As in other European countries, diesels were a little more efficient than gasoline LDVs. In 2015, the gap between both powertrains' specific fuel consumption was around 8%. Hybrids experienced a clear improvement between 2010 and 2015, being around 20% more fuel efficient than diesels. However, hybrids' low market share hardly affected the progress of total average fuel economy.

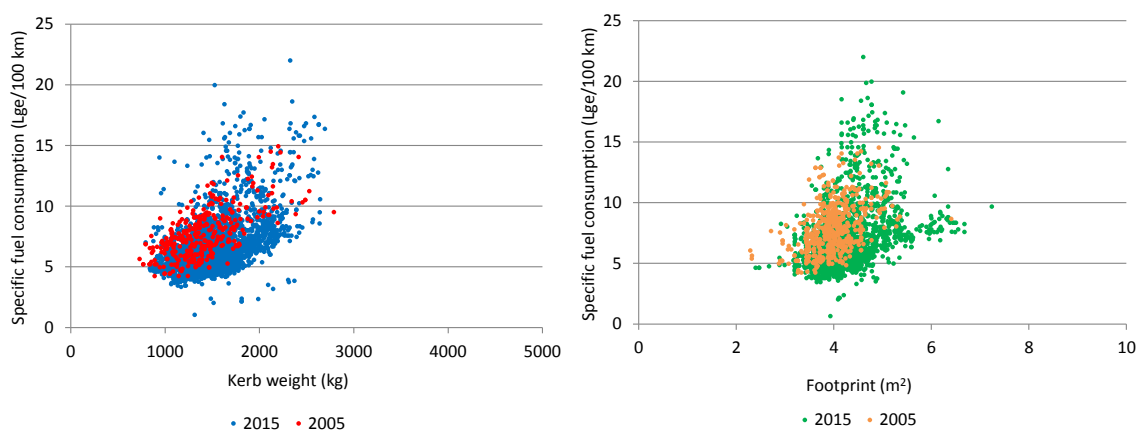
Figure 2 • Average new LDV fuel consumption per km by vehicle segment and powertrain, United Kingdom, 2005-15



Source: IEA elaboration and enhancement for broader coverage of IHS Markit database.

The UK followed EU trends when plotting weight and footprint against specific fuel consumption (Figure 3). New LDVs became more fuel efficient when comparing models of similar weight and footprint in 2015, as compared with models in 2005. Greater variability was also observed, as in other LDV markets.

Figure 3 • Fuel consumption per km of new LDVs plotted against vehicle weight and footprint, United Kingdom, 2005 and 2015

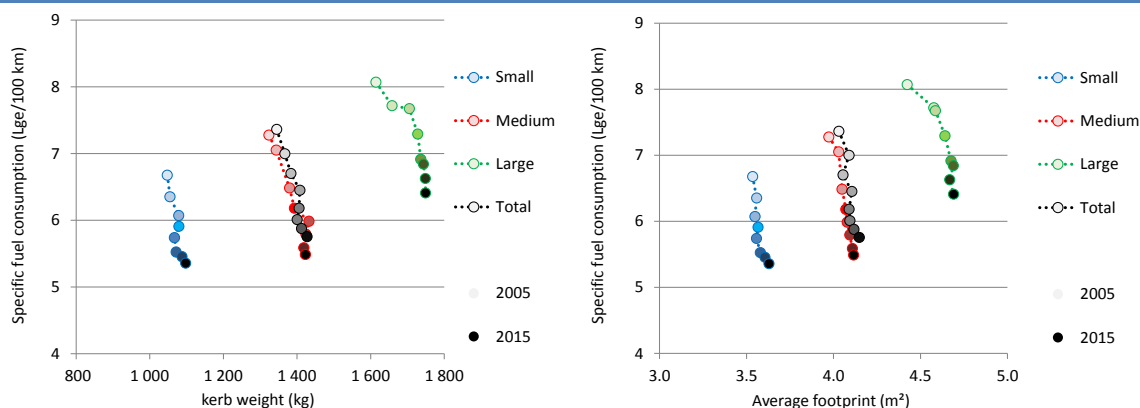


Source: IEA elaboration and enhancement for broader coverage of IHS Markit database.

Very clear improvement in fuel economy was evident for all vehicle segments (Figure 4, left). These steady rates of improvement confirm that fuel economy regulations are delivering results comparable to other European countries. Total specific fuel consumption closely followed that of the medium segment. For all three segments, weight has been on the rise, somewhat inhibiting fuel economy improvements.

Comparing specific fuel consumption with average footprint shows that total average footprint closely followed the medium segment. All vehicle segments increased their footprint between 2005 and 2015, particularly small vehicles between 2012 and 2015. This increase ran during the same years as weight increased for small LDVs.

Figure 4 • Average new LDV fuel consumption per km by segment plotted against vehicle weight and footprint, United Kingdom, 2005-15



Source: IEA elaboration and enhancement for broader coverage of IHS Markit database.

References

ACEA (European Automobile Manufacturers Association) (2016), *Overview of Purchase and Tax Incentives for Electric Vehicles in the EU in 2016*, www.acea.be/uploads/publications/Electric_vehicles_overview_2016.pdf.

EEA (European Environment Agency) (2016), *Monitoring of CO₂ Emissions from Passenger Cars – Regulation 443/2009*, www.eea.europa.eu/data-and-maps/data/co2-cars-emission-10.

GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) (2015), *International Fuel Prices 2014 – Data Preview*, www.giz.de/expertise/downloads/giz-2015-en-ifp2014.pdf.

IEA (International Energy Agency) (2016a), “Technology and policy drivers of the fuel economy of new light-duty vehicles: comparative analysis across selected automotive markets”, GFEI Working paper 12, OECD/IEA, Paris, www.globalfueleconomy.org/data-and-research/publications/gfei-working-paper-12.

IHS Markit (2016), *Vehicle Registrations and Other Characteristics at Model Level* (database), IHS Markit.

OICA (International Organization of Motor Vehicle Manufacturers) (2016), *World Motor Vehicle Production*, www.oica.net/category/production-statistics.

TransportPolicy (2016), *Fuel Efficiency and GHG*, http://transportpolicy.net/index.php?title=Category:Fuel_Efficiency_and_GHG.

UK Government (2016), *Plug-in Car Grant*, www.gov.uk/government/publications/plug-in-car-grant#history.

World Bank (2016a), *World Bank Open Data, World Development Indicators: Population Dynamics*, <http://databank.worldbank.org/data/reports.aspx?source=health-nutrition-and-population-statistics>.

World Bank (2016b), *World Bank Open Data, Urban population (% of total)*, <http://databank.worldbank.org/data/reports.aspx?source=health-nutrition-and-population-statistics>.

World Bank (2016c), *World Bank Open Data, GDP per capita (current USD)*, http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.PCAP.CD&id=af3ce82b&report_name=Popular_indicators&populartype=series.

This summary is taken from GFEI Working Paper 15. For more complete information and references, see <https://www.globalfueleconomy.org/data-and-research/publications/gfei-working-paper-15>

