South Africa

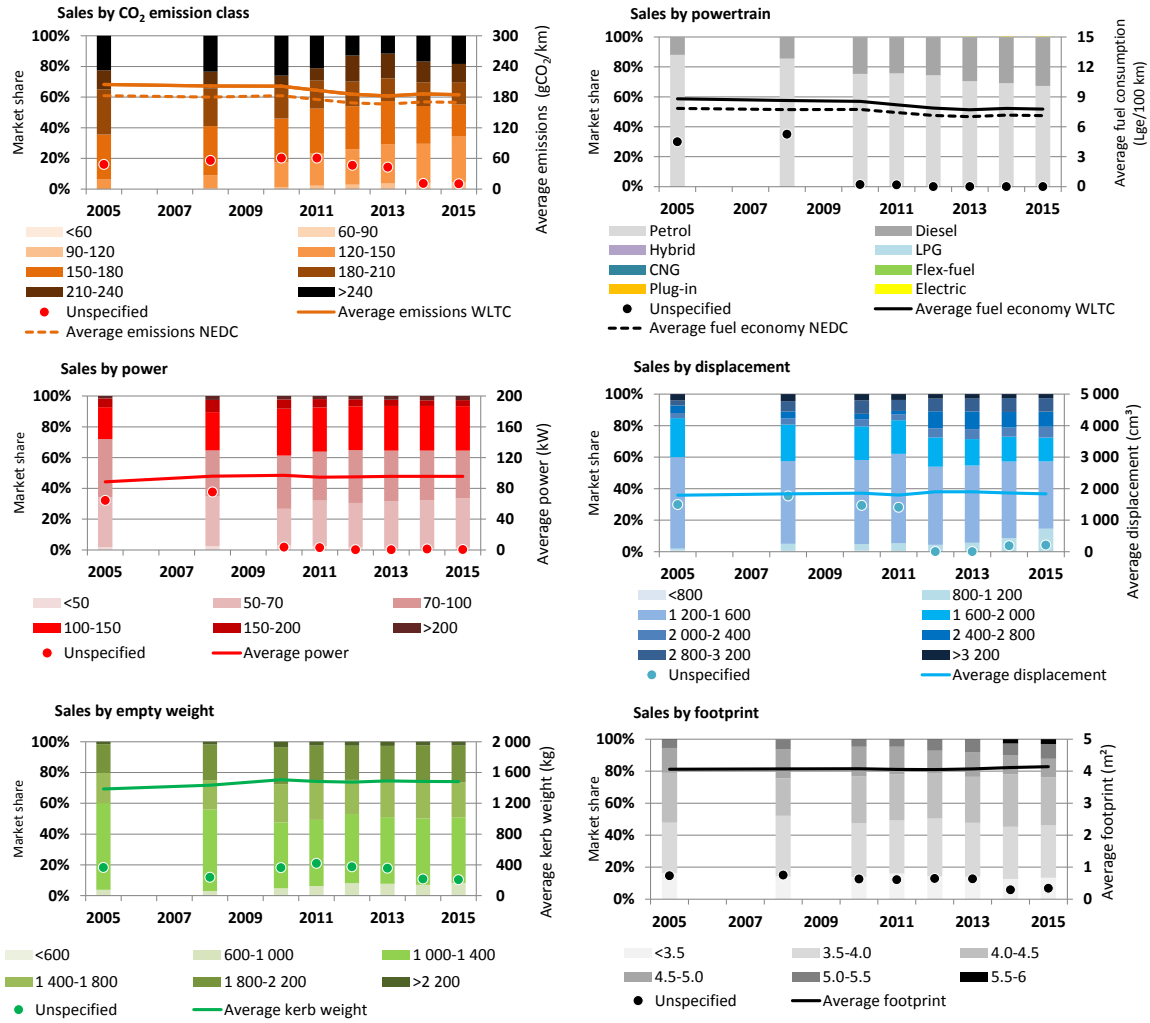
Country spotlight

Population (million) (World Bank, 2016a):	55
Urban population (% of total) (World Bank, 2016b):	65%
GDP per capita (2014 USD/year) (World Bank, 2016c):	5 700
Average price gasoline and diesel (USD cent per L, 2014) (GIZ, 2015):	119; 117

Fuel tax class (2014) (GIZ, 2015): taxed fuel price for petroleum fuels

In 2015, about 590 000 LDVs were sold in South Africa (IHS Markit, 2016). The LDV stock reached 6.6 million vehicles (IEA, 2016a). The LDV ownership rate was 0.12 cars per capita. South Africa has no fuel economy regulations. Since 2008, car dealerships have been obliged to inform clients about the specific fuel consumption of the car through a labelling scheme (UNEP, 2012). Differentiated vehicle registration taxes, including a component that varies according to the CO_2 emissions per km of the vehicle, were introduced in 2010 (OECD, 2013).

Figure 1 ● LDV market by g CO_2/km, powertrain, power, displacement, weight and footprint, South Africa, 2005-15



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

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

Market profile and vehicle characteristics

South Africa is one of the leading economies in Africa, which is also reflected in its LDV market, the largest in the continent, even if the number of newly registered LDVs plateaued between 2012 and 2015. In 2015, LDV registrations went down by 4% compared with 2014, to 590 000 vehicles (IHS Markit, 2016). By contrast, South Africa's LDV production grew by 10% year-on-year to 580,000 vehicles in 2015, making it the 23rd largest producer in the world (OICA, 2016). Toyota, Volkswagen and Ford represented almost 50% of new LDV registrations in 2015.

South Africa experienced a downward shift in specific CO_2 emissions between 2010 and 2012, pushed by an updated taxation system. However, progress did not continue, depicted by a flat trend between 2013 and 2015. During the period 2010-15, the market share of diesel LDVs grew from one-quarter to one-third of new LDV registrations. For major EU countries, higher diesel market share comes with lower average CO_2 emissions, but in South Africa this trend was less obvious, mostly caused by more than 80% of diesels being sold in the large car segment. Advanced powertrain technologies are almost non-existent, except for a small amount of electric vehicles.

Average engine power remained relatively stable between 2012 and 2015, at around 96 kW, with almost no change in relative market share. Displacement decreased to 1.8 L between 2013 and 2015, which was similar to the Russian Federation and Chile. Half of all new engines were less than 1.6 L.

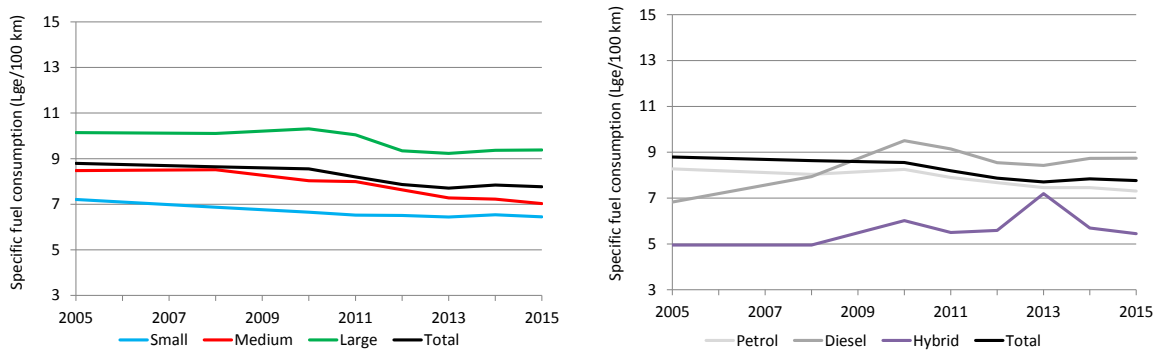
Average weight of newly registered LDVs remained relatively stable in the five most recent years. The average footprint of new LDVs mostly hovered around 4.0 m^2 and rose between 2013 and 2015 towards the worldwide average of 4.1 m^2.

Analysis of fuel economy trends

Medium and large vehicles were primarily responsible for the 2010-12 improvement in specific fuel consumption, as well as for the slowdown towards 2015 (Figure 2, left). The total average fuel economy trend suggests that large vehicles dominated the South African LDV market. Newly registered small LDVs modestly improved their average fuel economy from 2005 to 2013, after which it worsened a little.

Diesel-fuelled vehicles experienced an improvement in specific fuel consumption between 2010 and 2012, while they lost half of this improvement in the period 2013-15. The large gap in specific fuel consumption between diesel- and gasoline-driven LDVs (8.7 Lge/100 km vs 7.3 Lge/100 km) confirms the worsening fuel economy as being caused by more diesel registrations.

Figure 2 ● Average new LDV fuel consumption per km by vehicle segment and powertrain, South Africa, 2005-15



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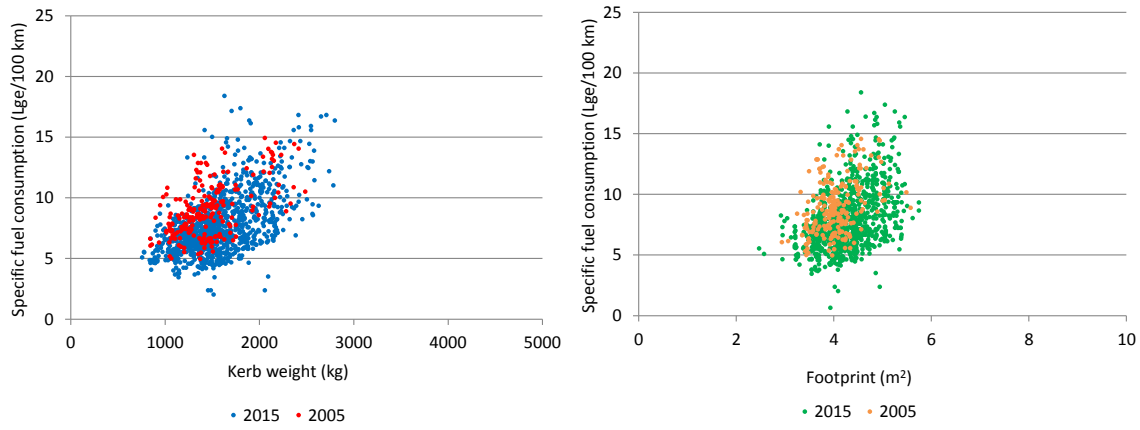
South Africa's LDV market diversified in the direction of heavier and larger vehicles from 2005 to 2015 (Figure 3). Furthermore, LDVs of equal weight improved specific fuel consumption from 2005 to 2015 vehicle models.

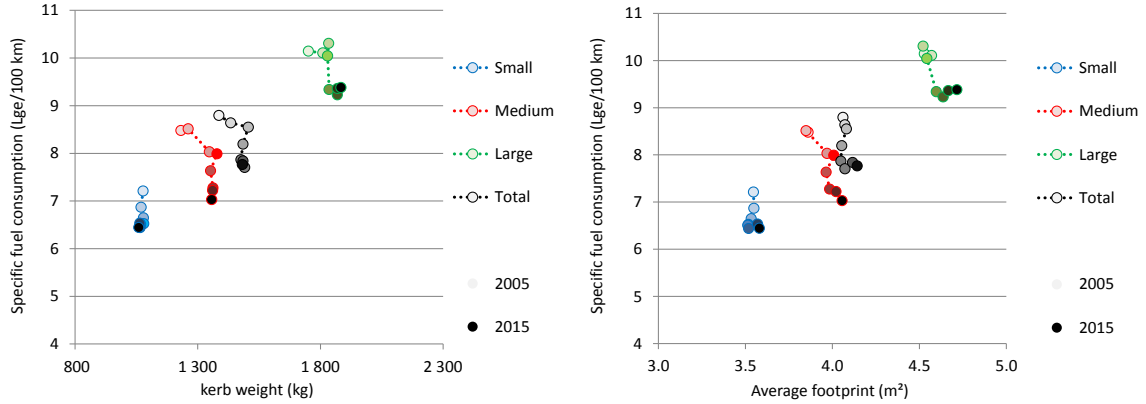
Figure 3 ● Fuel consumption per km of new LDVs plotted against vehicle weight and footprint, South Africa, 2005 and 2015



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

Plots of fuel consumption by vehicle segment as a function of empty weight and footprint (Figure 4) show that the introduction of the differentiated taxation of newly registered vehicles in 2010 had a visible impact on the way vehicles were marketed in South Africa. Prior to 2010, South Africa followed a pattern characteristic of unregulated and developing car markets: vehicle weight and footprint increased, while fuel economy improvement was of secondary importance for most consumers. After 2010 and until 2013, the line graphs are almost vertical, suggesting that fuel economy became a reference parameter for vehicle sales, limiting or cancelling the earlier shift towards heavier and larger cars in all segments. Despite the good developments in 2010 to 2013, fuel economy improvements stagnated in 2014 and 2015, when footprints increased slightly across all segments.

Figure 4 ● Average new LDV fuel consumption per km by segment plotted against vehicle weight and footprint, South Africa, 2005-15



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

References

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

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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.

OECD (Organisation for Economic Co-operation and Development) (2013), OECD Environmental Performance Reviews – South Africa. OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264202887-en

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

UNEP (2012), *The South African Developing Automotive Fuel Economy Policy*, UNEP, www.unep.org/transport/gfei/autotool/case_studies/africa/southafrica/SOUTH%20AFRICA%20CASE%20STUDY.pdf.

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.