

## Italy

### Country spotlight

Population (million) (World Bank, 2016a):	60.8
Urban population (% of total) (World Bank, 2016b):	69%
GDP per capita (2014 USD/year) (World Bank, 2016c):	29 800
Average price gasoline (USD cent per L, 2014) (GIZ, 2015):	214; 201
Fuel tax class (2014) (GIZ, 2015):	taxed petroleum fuels

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In 2015, about 1.7 million LDVs were sold in Italy (IHS Markit, 2016). The LDV stock totalled 26 million (IEA, 2016a). LDV ownership amounted to 0.43 LDVs per capita. Voluntary CO<sub>2</sub> emission standards were introduced in the European Union in 1998, and became mandatory in 2009. By 2021, CO<sub>2</sub> emissions of passenger LDVs must fall to 95 g CO<sub>2</sub>/km. The EU target for LCV in the same year is 147 g CO<sub>2</sub>/km (TransportPolicy, 2016).

In 2003, Italy introduced a project to promote CNG and LPG within the transport sector, which led to deployment of methane infrastructure (ODYSSEE-MURE, 2011). Favourable fuel taxes and scrapping incentives were introduced to boost natural gas vehicles (NGV System Italia, 2010). Furthermore, Italian BEVs are exempt from ownership tax for the first five years of their registration, followed by a tax that is 25% of conventionally powered vehicles (ACEA, 2016).

### Market profile and vehicle characteristics

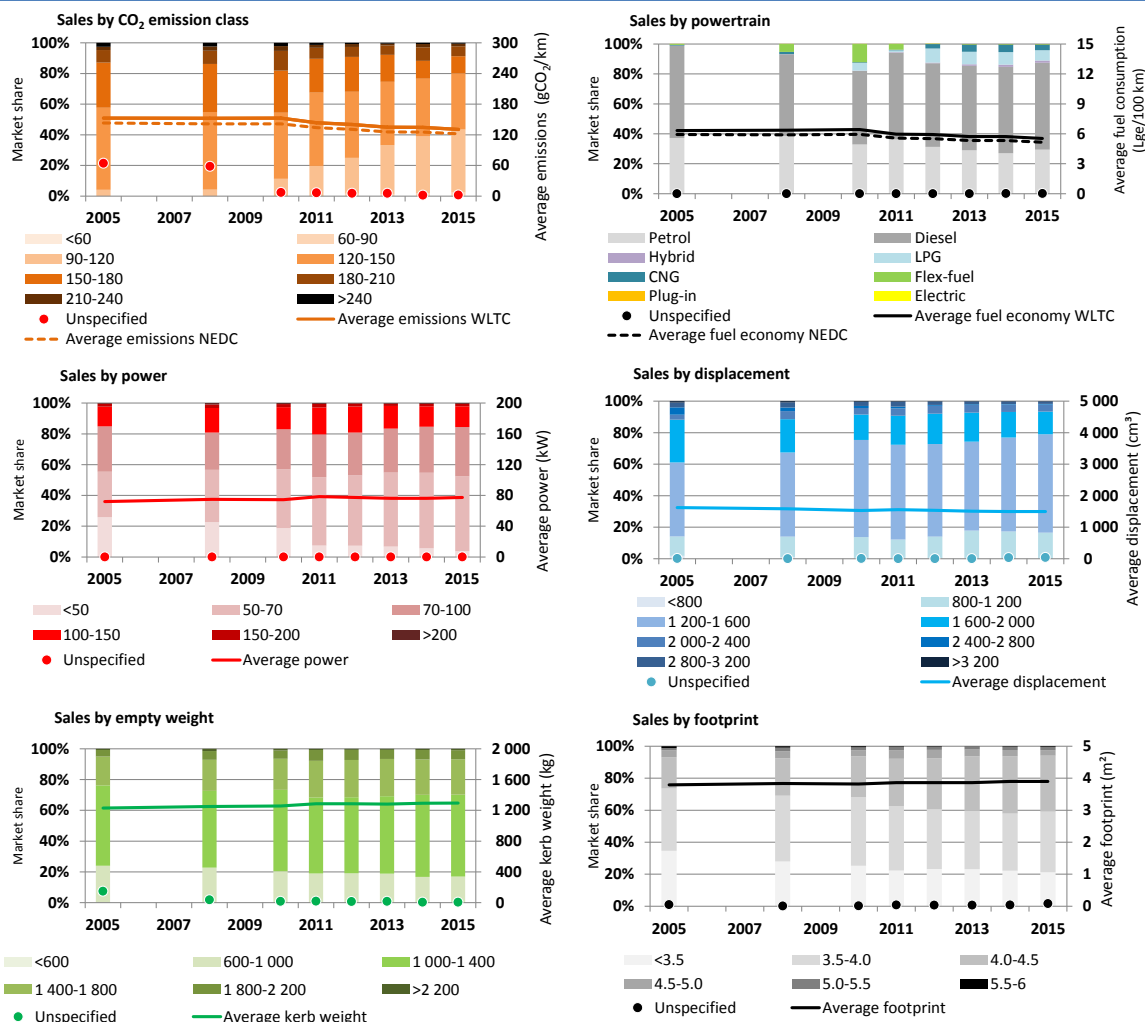
Italy is the fourth-largest economy in the European Union, and LDV registrations are slowly recovering from the economic challenges faced there between 2010 and 2013, with new registrations totalling 1.7 million in 2015 (IHS Markit, 2016). LDV production in Italy experienced a 45% increase between 2014 and 2015, reaching almost 1 million vehicles (OICA, 2016). As a result, Italy is the nineteenth largest vehicle producer worldwide, with approximately half the production volume of France. Fiat, which merged with Chrysler in 2014 in the FCA group, is the main Italian OEM. The FCA group owns several Italian brands, such as Alfa Romeo and Maserati.

Italian specific average CO<sub>2</sub> emissions started to decline after 2010, falling by 15% in five years. These improvement rates are similar to Germany's following the European-wide implementation of fuel economy standards. The market share of vehicles emitting 90-120 g CO<sub>2</sub>/km grew fourfold to 40% between 2010 and 2015. The greatest losses in market share occurred in the upper-middle segment (150-210 g CO<sub>2</sub>/km), which halved between 2010 and 2015. Diesels lost popularity between 2005 and 2010, but regained market share in the years leading up to 2015, when they accounted for almost 60% of the LDVs sold in the Italian market. In the most recent years, a growing presence of CNG and LNG vehicles has followed the introduction of favourable policies for natural gas vehicles in 2010. This development resulted in the market share for natural gas vehicles growing to around 10%.

The average power of new LDVs increased by 7% since 2005, reaching 78 kW in 2015. Average power of new cars sold in Italy grew the slowest and maintained the lowest absolute value across major European countries. Registrations of vehicles with engines below 50 kW decreased by 75% between 2010 and 2015. Most of the lost market share went to the segment one power class up (50-70 kW). Average displacement of new LDVs fell by almost 10% in ten years, to 1.5 L in 2015. LDVs with engines between 1.2 L and 1.6 L represented more than 60% of the Italian LDV market in 2015. Hence smaller engines provided the same amount of engine power over time.

Newly registered LDVs became 5% heavier between 2005 and 2015. Three-quarters of all vehicles sold after 2010 had a kerb weight between 1 000 kg and 1 800 kg. During the same period, the average footprint grew by 3% to 3.9 m<sup>2</sup> in 2015.

Figure 1 • LDV market by g CO<sub>2</sub>/km, powertrain, power, displacement, weight and footprint, Italy, 2005-15



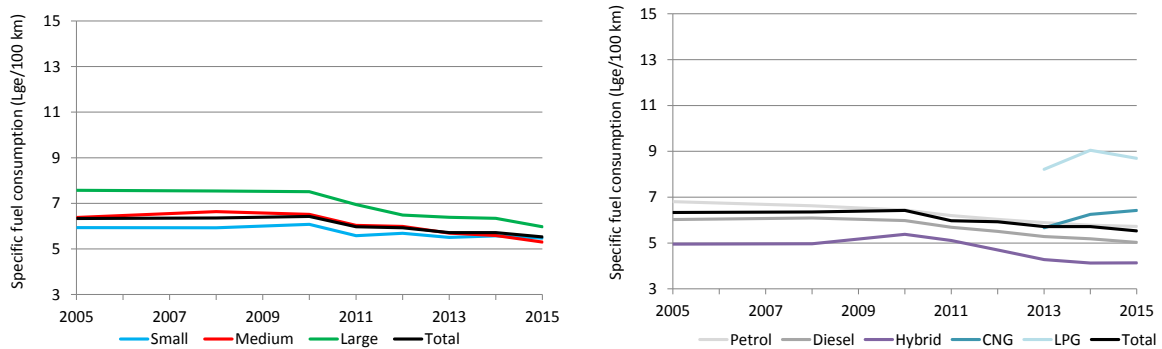
Source: IEA elaboration and enhancement for broader coverage of IHS Markit database.

### Analysis of fuel economy trends

Fuel economy trends in Italy show similar patterns to the other European countries covered in this report, where all segments experienced similar improvements (Figure 2, left). The fuel economy gap between small and medium LDVs narrowed, differing by less than 3% in 2015, as in the case of the United Kingdom. Large vehicles used on average 6 Lge/100 km in 2015, a value more than 10% lower than the average for small vehicles in the United States. Total average fuel economy is close to that of the small and medium segments, which constitute the majority of sales.

Regarding powertrains, diesels were more efficient than gasoline vehicles (Figure 2, right). CNG had a fuel consumption profile slightly higher than conventional powertrains in 2015. LPG vehicles used twice the amount of fuel per km on average compared with new diesel LDVs.

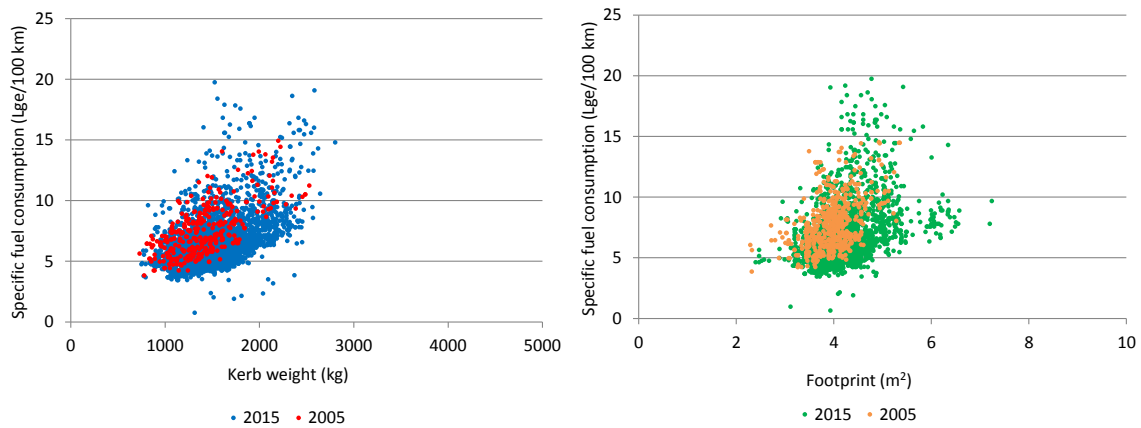
**Figure 2 • Average new LDV fuel consumption per km by vehicle segment and powertrain, Italy, 2005-15**



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

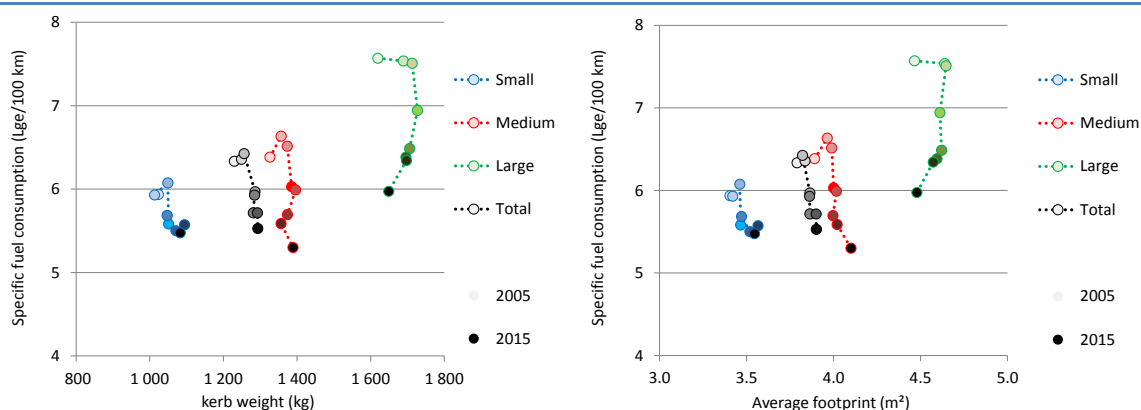
The graphs comparing weight and footprint to specific fuel consumption exemplify the relatively homogeneous trends within the European Union (Figure 3). New vehicles became heavier and larger, but also underwent significant improvements in specific fuel consumption. Even though Italy’s LDV market was already well-established in 2005, the market continued to diversify up to 2015, a trend that is also observed for other European countries in this report.

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



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

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



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

The average fuel economy improved across all segments to 2015 (Figure 4), although small vehicles improved much less than medium and large vehicles. Similar patterns are visible for average footprint (Figure 4, right). Overall, weight and footprint increased, due to the larger shares of small and medium LDVs.

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