

## Thailand

### Country spotlight

Population (million) (World Bank, 2016a):	68
Urban population (% of total) (World Bank, 2016b):	50%
GDP per capita (2014 USD/year) (World Bank, 2016c):	5 800
Average price gasoline and diesel (USD cent per L, 2014) (GIZ, 2015):	150; 100
Fuel tax class (2014) (GIZ, 2015):	no entry

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In 2015, the Thai market for new LDVs totalled nearly 760 000 vehicles (IHS Markit, 2016). The LDV stock reached almost 12 million in the same year (IEA, 2016a). LDV ownership was 0.175 LDVs per capita, which is high compared with other countries with similar average income: Thailand has almost double the ownership rate of China, despite the fact that Chinese per capita income is about USD 2 200 higher. LDV ownership in Thailand is also higher than in Brazil or Chile, while per-capita income is 50-100% higher in these countries. More than 50% of newly registered LDVs in Thailand are pick-up trucks. This is largely a result of tax breaks for these vehicles. Thailand has no fuel economy standards in place, but is currently developing them. Since October 2015, car dealerships have been obliged to inform clients about the specific fuel consumption of vehicles for sale (in addition to information such as the pollutant emission class of the vehicle) through a labelling scheme based on CO<sub>2</sub> ratings. The scheme has been used as the basis for the new excise tax rates from 1 January 2016 (FIA Foundation, 2016). A tax incentive for the production of “eco-vehicles” was established in 2009, offering reduced excise taxes (17% instead of 30%) for cars complying with specific requirements (UNESCAP, 2011).

### Market profile and vehicle characteristics

After a rapid expansion of LDV registrations between 2011 and 2013 as a result of the First Car policy – a tax refund scheme to foster domestic car production after the 2011 flood, Thailand’s LDV market shrunk by more than 40% between 2013 and 2015, falling to 760 000 registrations in the latest year (IHS Markit, 2016). Japanese OEMs remain as popular as in 2013, leading the market with approximately 90% of LDV sales. As in many emerging economies, growth slowed down in the years up to 2015. At the same time, domestic production of LDVs was stable between 2014 and 2015, maintaining its twelfth place worldwide by producing almost 1.9 million vehicles.

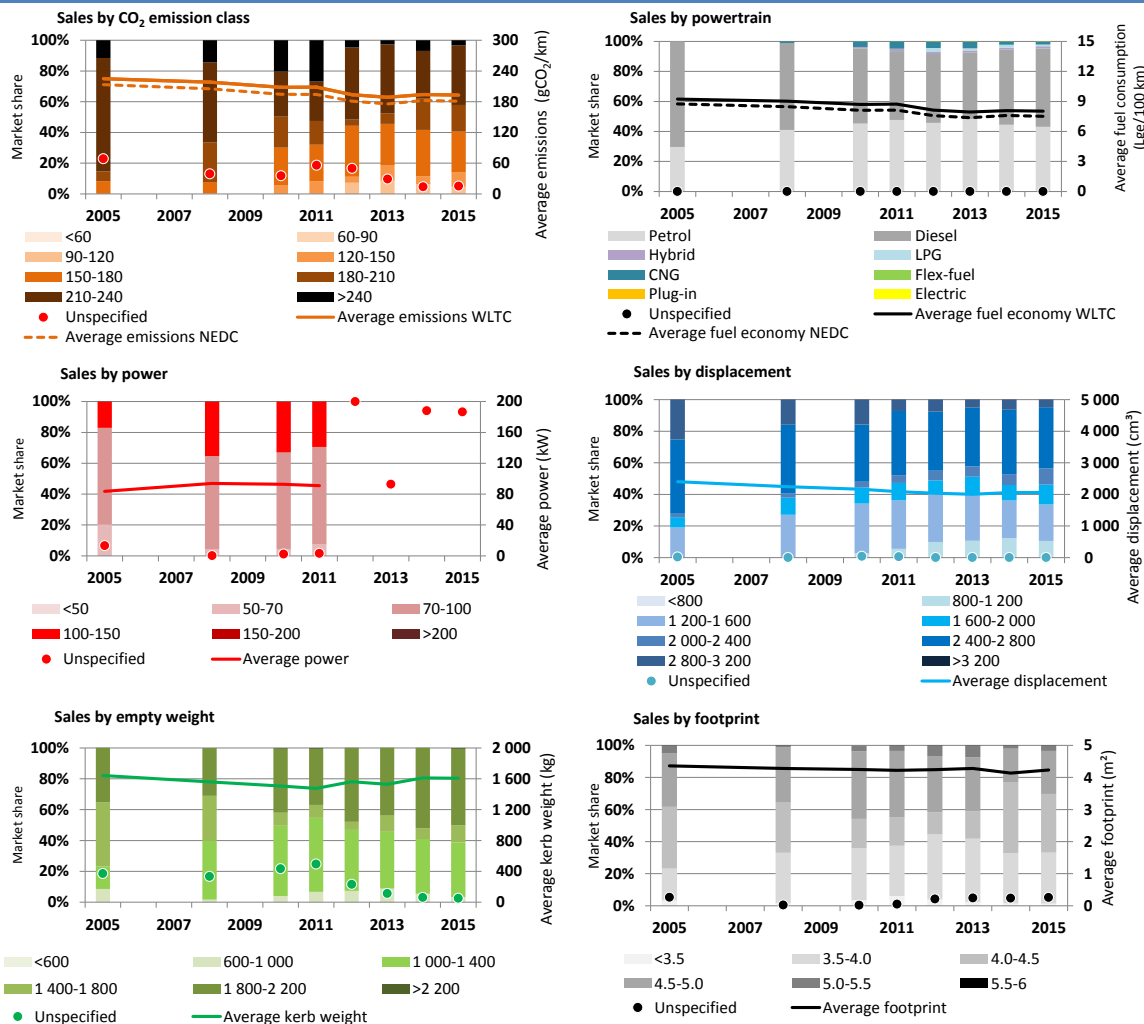
In 2015, newly registered LDVs emitted on average 193 g CO<sub>2</sub>/km, the third year without noticeable improvement. High-emission vehicles (210-240 g CO<sub>2</sub>/km) lost 20% of their market share between 2012 and 2015, while low-emission vehicles (90-120 g CO<sub>2</sub>/km) halved their share in the same period, leading to stagnating progress. Diesel and gasoline engines had equal market share in 2012, after which diesels gained in popularity, growing by 15% between 2012 and 2015, while gasoline vehicles lost 5%. CNG and LPG cars did not sustain their popularity, going from 6% market share in 2013 to 3% in 2015.

Data regarding the average power of newly registered LDVs was insufficient for clear outcomes. After a steep decline in average displacement up until 2013, a reverse trend was seen up to 2015, approaching 2.1 L in 2015. Average displacement in Thailand was more than 40% higher compared with other Southeast Asian countries, such as Indonesia, primarily because of the high sales share of pick-up trucks.

After a small reduction in average weight between 2012 and 2013, new LDVs in 2014 and 2015 weighed around 1600 kg, which was roughly 5% more than 2013. Few vehicles were sold in the two lowest weight categories, while the high segment (1 800-2 200 kg) encompasses more than 50% of the market. The average footprint of newly registered LDVs shrank between 2013 and 2014 due to

the First Car policy which targeted consumers buying their first new car ever – mostly small or lower medium class cars, but increased between 2014 and 2015, when the scheme ended. The rise in weight and footprint could be one of the main causes of stagnating improvement in fuel economy.

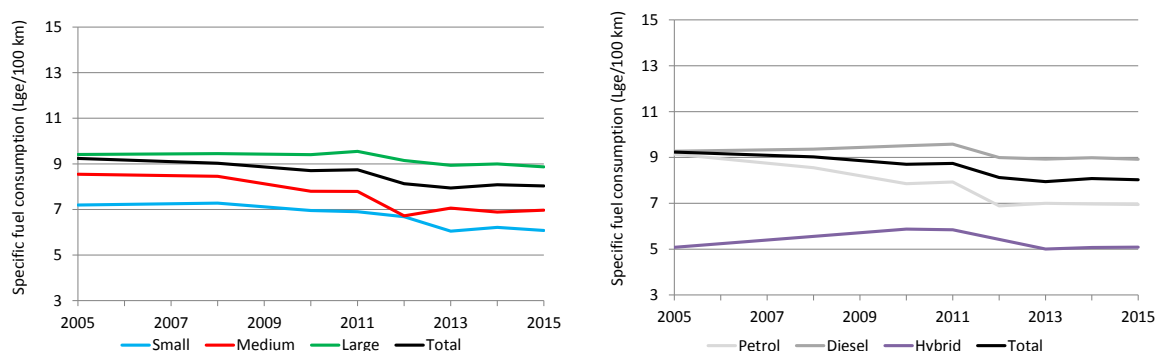
Figure 1 • LDV market by g CO<sub>2</sub>/km, powertrain, power, displacement, weight and footprint, Thailand, 2005-15



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

### Analysis of fuel economy trends

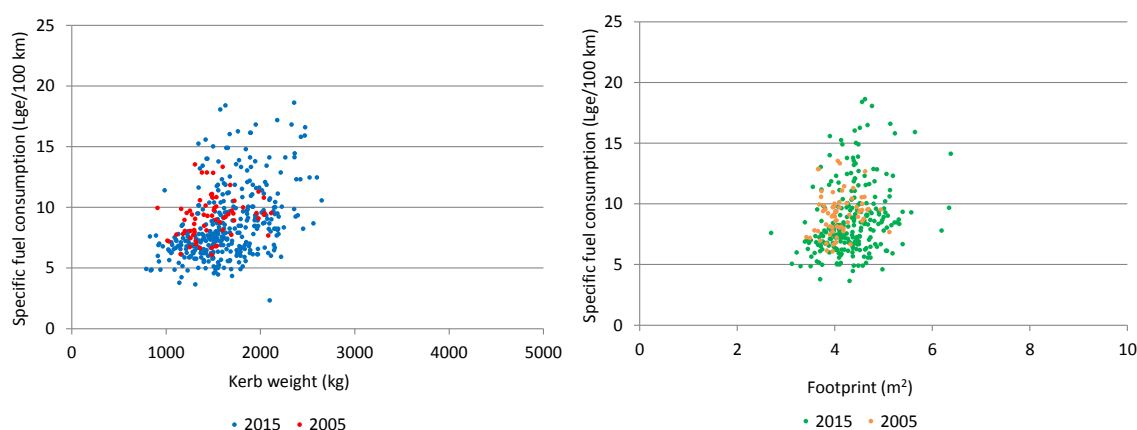
All vehicle segments saw nearly flat average fuel economy between 2013 and 2015 (Figure 2). The total average fuel consumption of 8.0 Lge/100 km was just above the non-OECD average of 7.9 Lge/100 km. Diesel and gasoline powertrains had a similar trend in average fuel economy (Figure 2, right). However, since diesels were mostly sold in pick-up trucks, they had an average fuel economy that was approximately 30% worse than gasoline-fuelled vehicles, providing further insight into the reasons for stagnating fuel economy, alongside the increased popularity of diesels. The gap between diesels and gasoline powertrains was also observed in other emerging economies due to the bias of diesels for larger vehicles and SUVs.

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

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

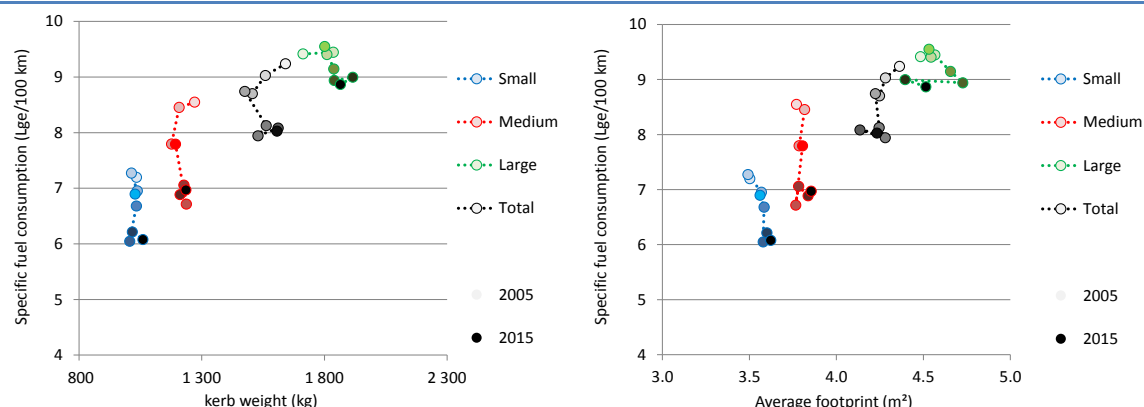
Thailand's LDV market was limited in a similar way to India and Indonesia regarding available model types, confirming a trend within the South/Southeast Asia regions. The 2015 data points are more spread out in comparison to the clouds in 2005, indicating a more diversified market (Figure 3). LDVs of equal weight became somewhat more efficient up to 2015, with no clear trend for footprint compared with specific fuel consumption. The results for 2013 (IEA, 2016a) showed a much clearer specific fuel consumption improvement with similar weight over time, confirming the recent stagnation in average fuel economy in Figure 2.

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

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

Both small and medium LDVs experienced decreasing average weight with stalling improvement in fuel economy (Figure 4, left). Over the ten years 2005-15, large LDVs grew heavier and average fuel economy development also stagnated.

Footprint data show similar signs of stagnation (Figure 4, right). Small vehicles saw their specific fuel consumption improve, while their footprint grew somewhat larger, though stagnating between 2012 and 2015. Medium vehicles reduced in size under strong specific fuel consumption advancement. Large vehicles showed unclear developments, strongly influencing total specific fuel consumption progress.

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

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

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