

## Vehicle Fleet Statistics

OCTOBER - DECEMBER QUARTER OF 2011

ISSN 1173-1079

QUARTERLY  
REPORT



## Foreword

The October–December 2011 Quarterly Fleet Report is a brief quarterly review of vehicle fleet statistics. It builds on the 2010 Fleet Statistics Report, and provides information on subsequent trends in vehicle registration patterns, vehicle fuel economy and fuel prices.

This report and the accompanying data are available on the Research tab of the Ministry of Transport website ([www.transport.govt.nz/research/quarterlyvehiclefleetstatistics](http://www.transport.govt.nz/research/quarterlyvehiclefleetstatistics)). The 2010 Fleet Statistics are also available at [www.transport.govt.nz/research](http://www.transport.govt.nz/research).

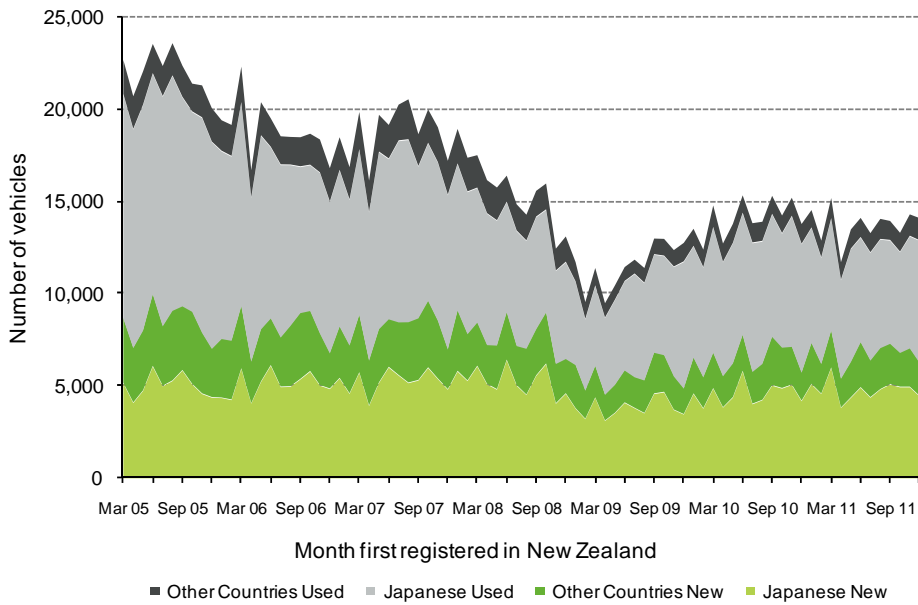
## Table of Contents

Foreword.....	1
Registrations.....	2
Used import ages.....	4
Average CO <sub>2</sub> emissions from light fleet registrations .....	5
Whether the fuel consumption of light fleet registrations is known .....	5
Emissions standards of light vehicles entering the fleet.....	6
CO <sub>2</sub> emissions of New Zealand-new light vehicle registrations .....	8
CO <sub>2</sub> emissions of used imported petrol light vehicle registrations.....	9
CO <sub>2</sub> emissions of all petrol light vehicle registrations.....	10
CO <sub>2</sub> emissions of new diesel light fleet registrations .....	11
The engine size of light fleet registrations .....	12
Petrol and diesel deliveries.....	13
Petrol and diesel pump prices .....	14
CO <sub>2</sub> emissions of new light vehicles entering the fleet versus fuel prices.....	15
Travel.....	16
Travel and fuel prices .....	17
Purchase of road user charges .....	18

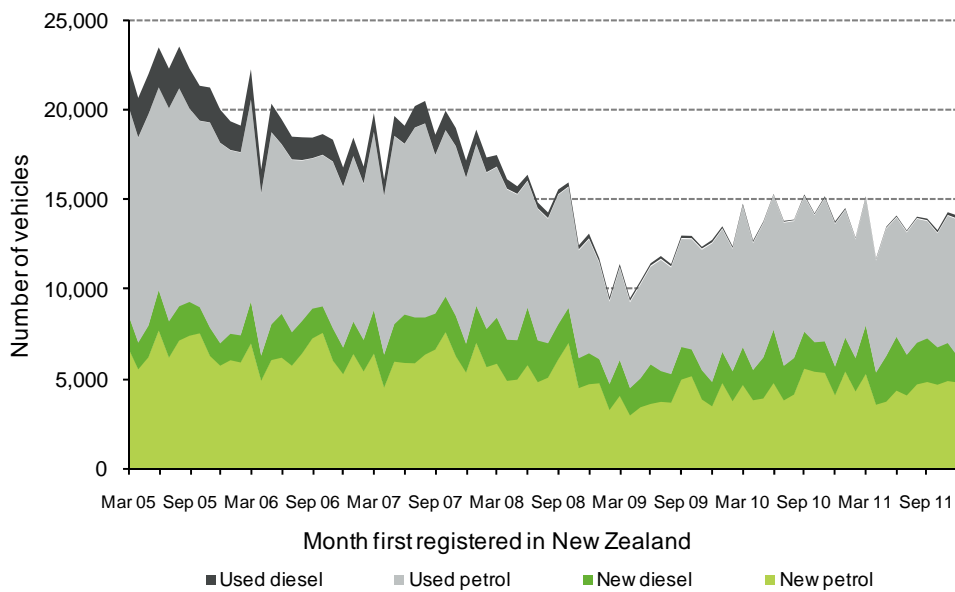
## Registrations

Figures 1a and 1b show that sales of used light vehicle imports increased again after the drop in 2008 and the first quarter of 2009, but remain at a far lower level than the peak in the mid 2000s. New vehicle registrations have dropped far less than used vehicle registrations. New light vehicle registrations were slightly up on 2010 in 2011 (81,378 vs 77,829) and used imports were down (82,951 vs 90,370).

**Figure 1a : Monthly light vehicle registrations, by country**



**Figure 1b : Monthly light vehicle registrations, by fuel**

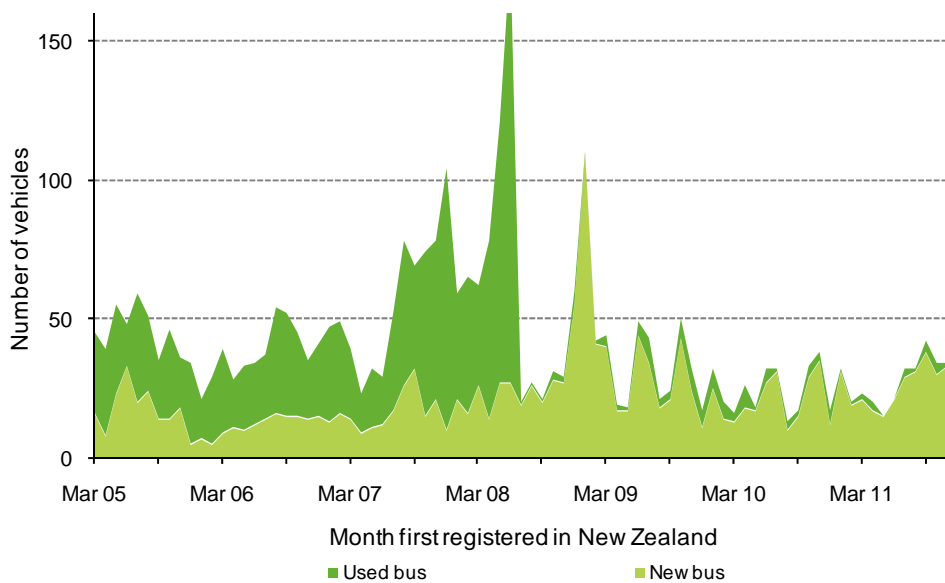


Registrations of used buses and trucks (Figures 1c and 1d) dropped to very low levels after July 2008. This reflects the effect of the 2007 Vehicle Exhaust Emissions Rule, which precluded the entry of diesel vehicles built to older standards. Although registrations are usually an indication of sales, registration can take place months or even years before a vehicle is sold. In addition, many imported vehicles were registered at particular times of the year to avoid having to comply with vehicle rules (for example, many older vehicles were registered in June 2008 prior to the Heavy Vehicle Brakes Rule coming into force in July 2008). It is likely that sales, as opposed to registrations, have been much more uniform since January 2008 than the registrations data suggests.

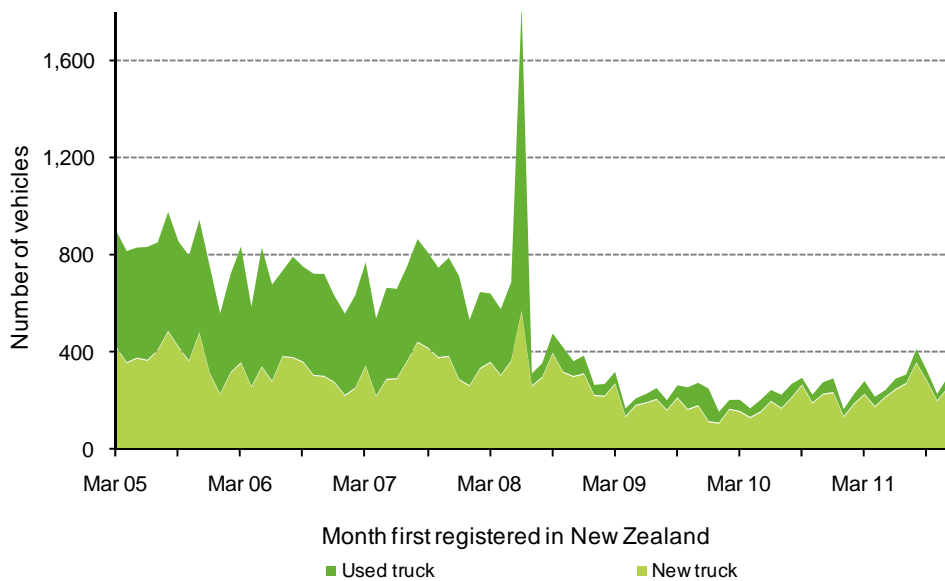
There was a slight increase in registrations of used diesel vehicles in the last months of 2011. This may continue in 2012, as more compliant vehicles become available in Japan.

The 2010 Fleet Statistics report ([www.transport.govt.nz/research](http://www.transport.govt.nz/research)) provides more information on truck and bus fleets.

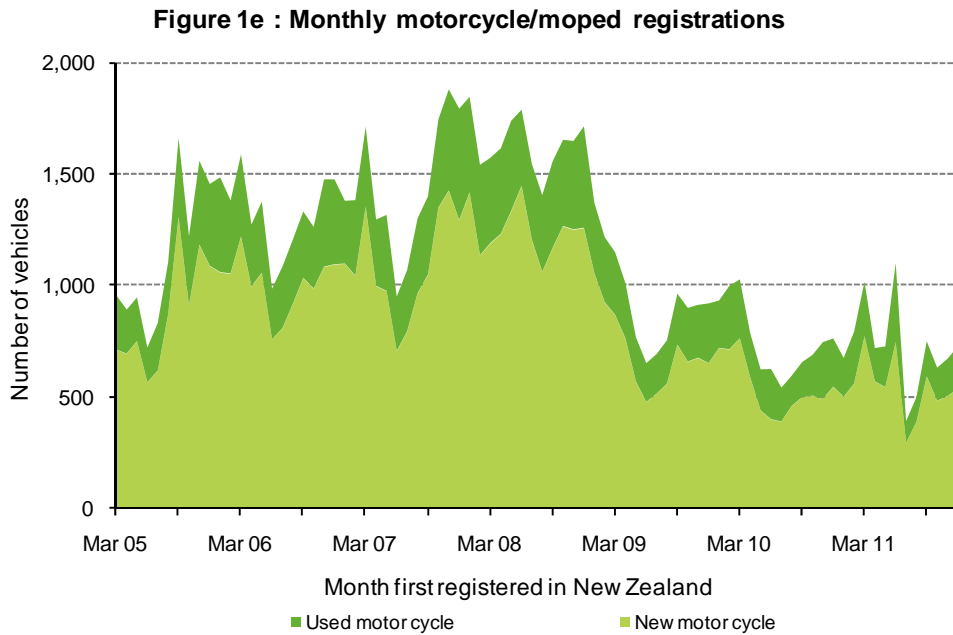
**Figure 1c : Monthly bus registrations**



**Figure 1d : Monthly truck registrations**

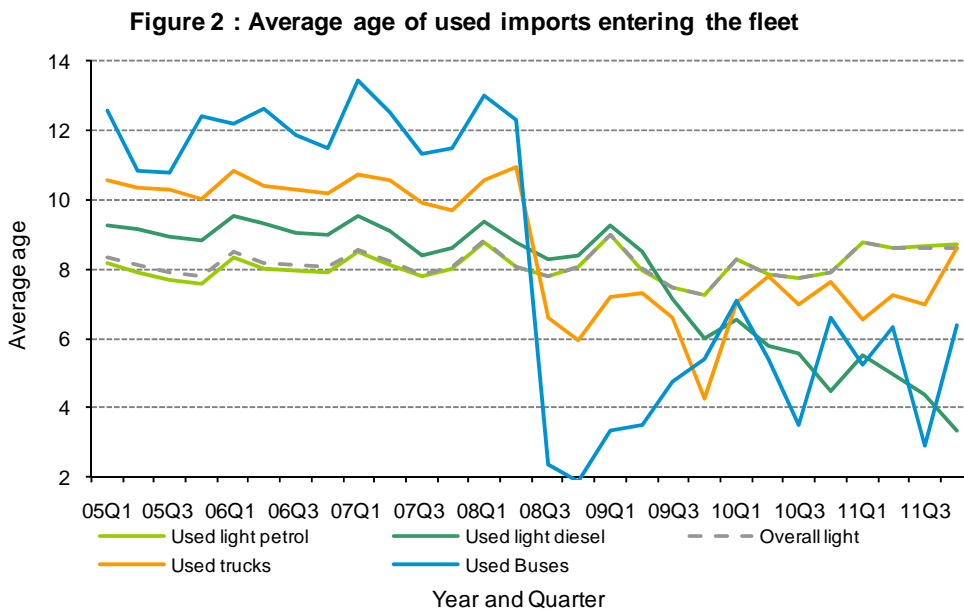


Motorcycle and moped sales (Figure 1e) increased in 2008, possibly in response to the higher fuel prices. Sales dropped in 2009, and dropped further in 2010, and have fluctuated since mid-2010. The 2010 Fleet Statistics Report (<http://www.transport.govt.nz/research/Pages/NewZealandVehicleFleetStatistics.aspx>) provides more information on the motorcycle fleet.



### Used import ages

The decreased age of used truck and bus imports registered early in 2008 may have been an early effect of the 2007 Vehicle Exhaust Emissions Rule and the Heavy Vehicle Brakes Rule. The Vehicle Exhaust Emissions Rule precludes the registration of vehicles that do not meet the latest emission standards, and the older vehicles being sold were probably imported before the Vehicle Exhaust Emissions Rule and the Heavy Vehicle Brakes Rules took effect. Figures 1c and 1d show that registrations of used import trucks and buses have dropped substantially.

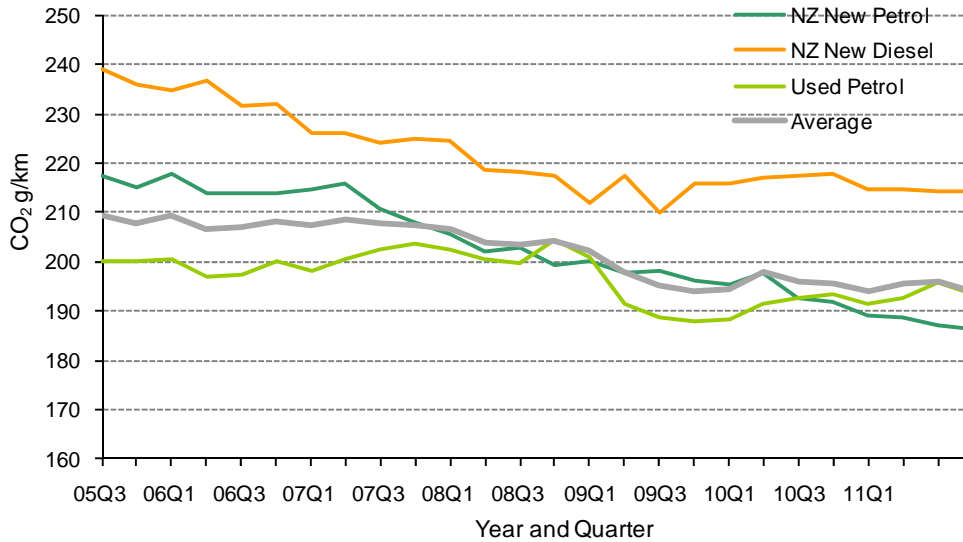


Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec

### Average CO<sub>2</sub> emissions from light fleet registrations

Figure 3 shows the average CO<sub>2</sub> emissions from light vehicles entering the fleet were declining (due to improved fuel efficiency) from 2006 to 2009, but have not varied substantially since the third quarter of 2009. The economy of New Zealand-new petrol vehicles has been improving in recent quarters, but the fleet gains have been reduced by the lack of reduction in New Zealand-new diesel and used imports.

**Figure 3 : Light vehicle registrations  
Average CO<sub>2</sub> emissions**

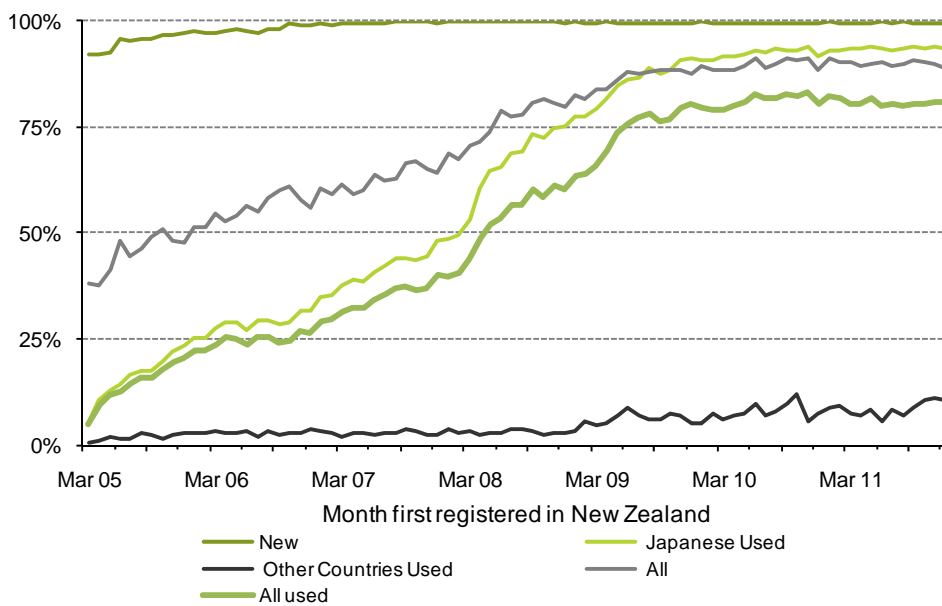


Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec

### Whether the fuel consumption of light fleet registrations is known

Figure 4a shows that 94 percent of used Japanese imports entering the fleet now have known fuel consumption values. However, the number of non-Japanese used imports with a known fuel consumption value is only 6 to 10 percent.

**Figure 4a : Percentage of vehicles with fuel test cycle values**

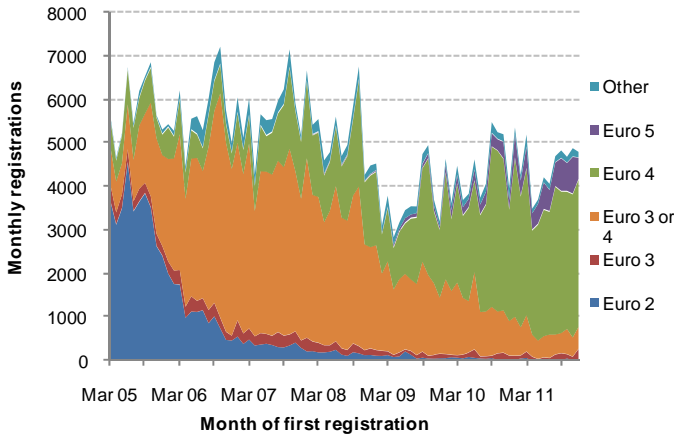


## Emissions standards of light vehicles entering the fleet

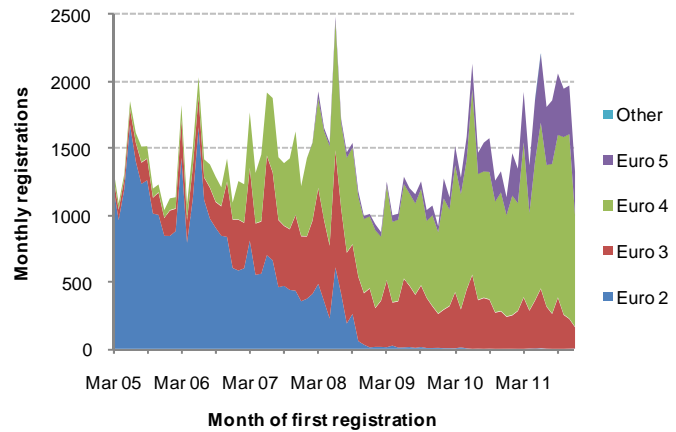
Under the Vehicle Exhaust Emissions Rule, all vehicles being registered in New Zealand are required to be built to a recognised emissions standard. Standards may come from Europe (Euro), Australia (Australian Design Rules (ADR)), Japan, or the United States of America. The following graphs show the steady improvement in the emissions standards of vehicles entering the New Zealand fleet over time.

Most New Zealand-new light vehicles comply with a European standard, and most used imports comply with a Japanese standard.

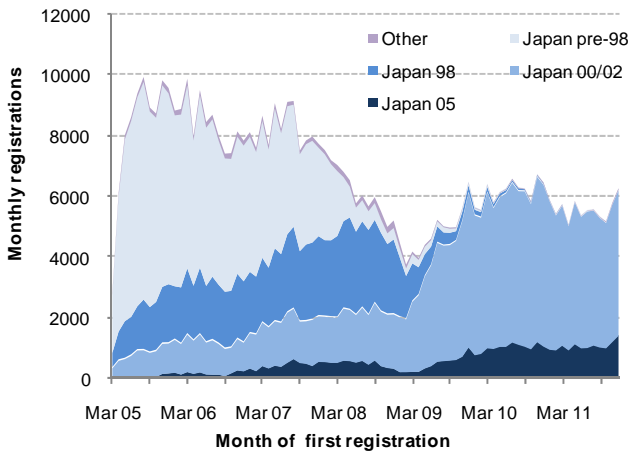
**Figure 4b : NZ New petrol emissions regime**



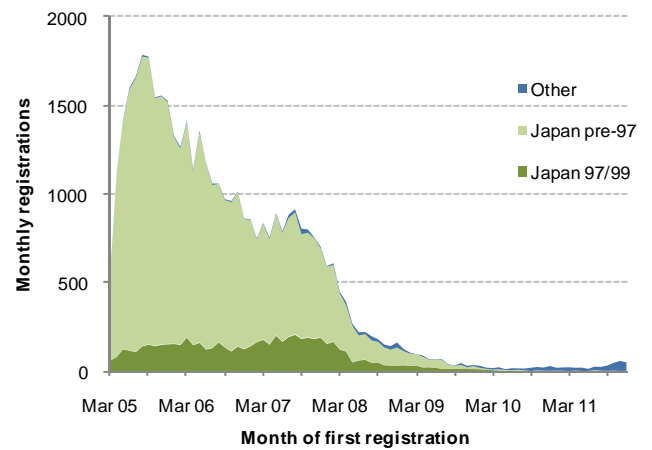
**Figure 4c : NZ New diesel emissions regime**



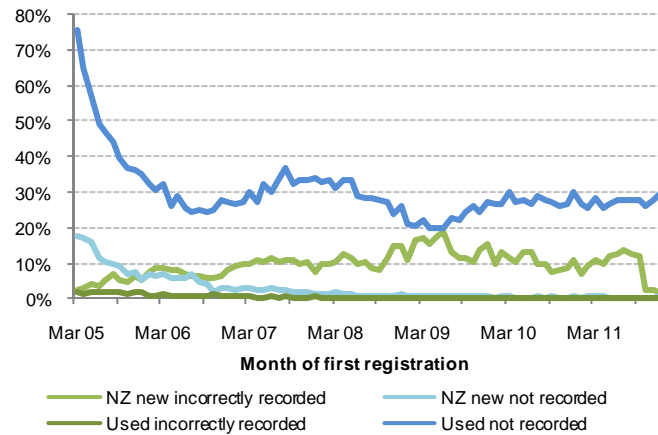
**Figure 4d : Used petrol emissions regime**



**Figure 4e : Used diesel emissions regime**



**Figure 4f : Missing emissions regime**



The spreadsheet that accompanies this report provides a detailed breakdown of the 'Other' category. The explanatory notes on the next page explain how the Australian standards have been treated, and what 'incorrectly recorded' means.

**Explanatory notes:**

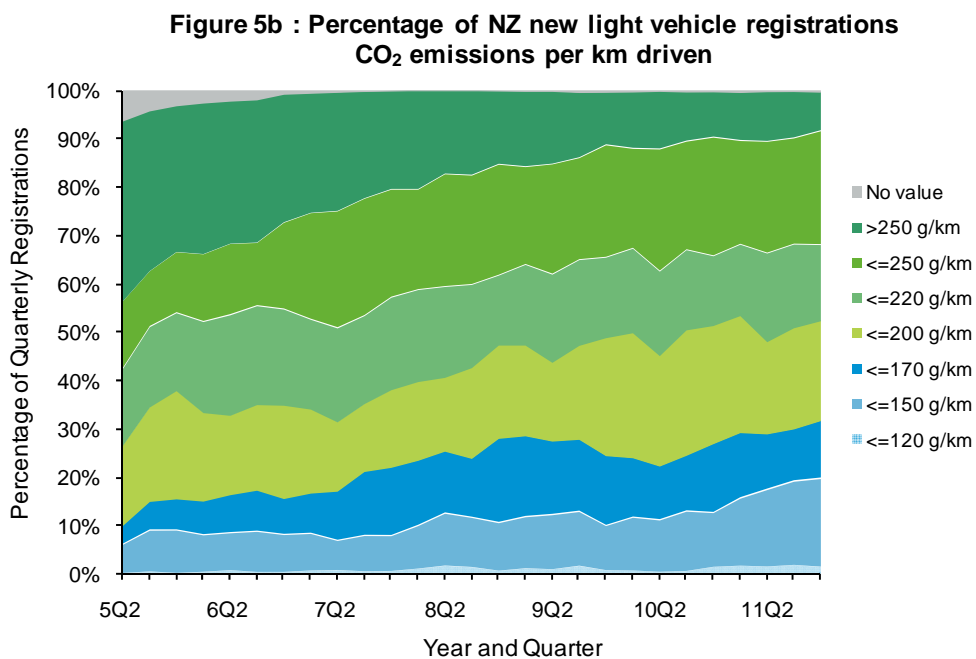
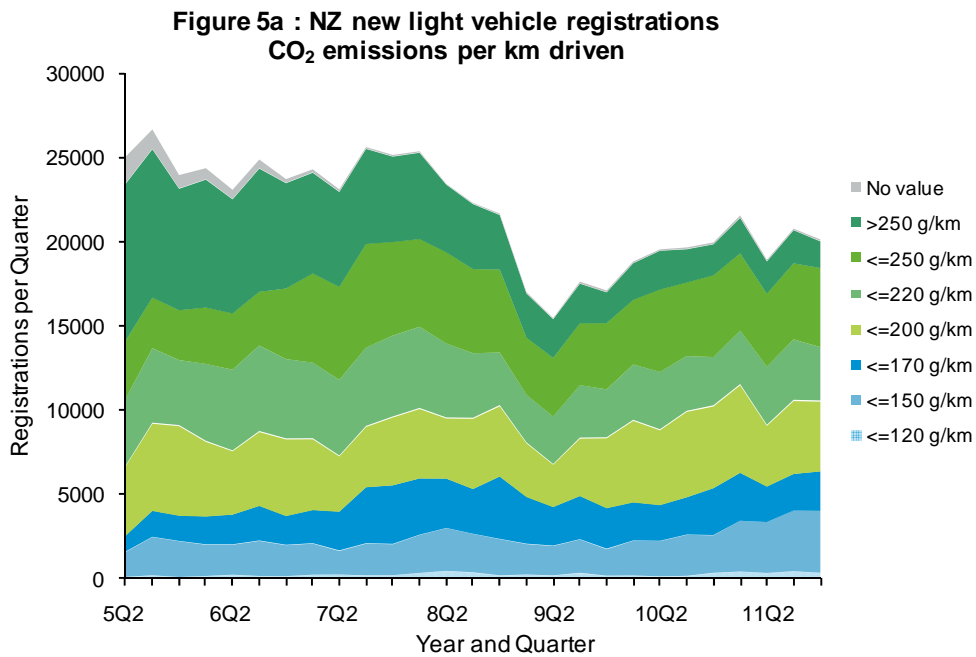
Australian Design Rules emissions standards are identical to European emissions standards, although they sometimes have different implementation dates. For simplicity, the two are combined and reported as European standards on the graphs above.

Fewer than 100 vehicles a year are reported to comply with United States of America standards, so these are not broken down further in the accompanying spreadsheet.

Vehicles are shown as 'incorrectly recorded' when the fuel type did not match the emissions standard, where the vehicle was reported to meet a standard that did not exist, or where insufficient information was provided to determine the standard.

## CO<sub>2</sub> emissions of New Zealand-new light vehicle registrations

Registrations in the segment of the fleet with lower CO<sub>2</sub> emissions (under 200g CO<sub>2</sub>/km) now make up a larger share of new registrations than they used to. The least efficient segment (over 250g CO<sub>2</sub>/km) has shrunk. The average results can be seen in Figure 3 on page 5.



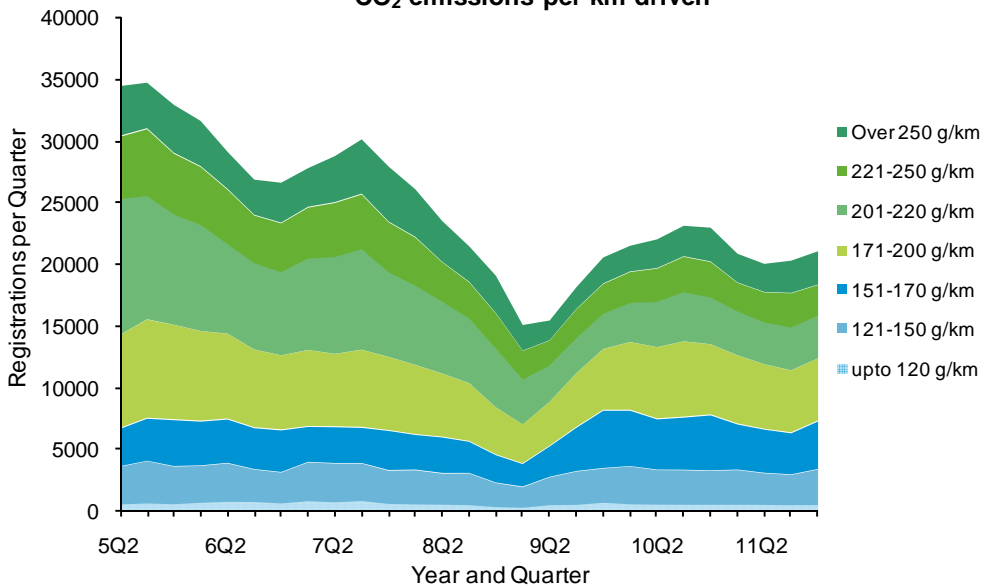
Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec

## CO<sub>2</sub> emissions of used imported petrol light vehicle registrations

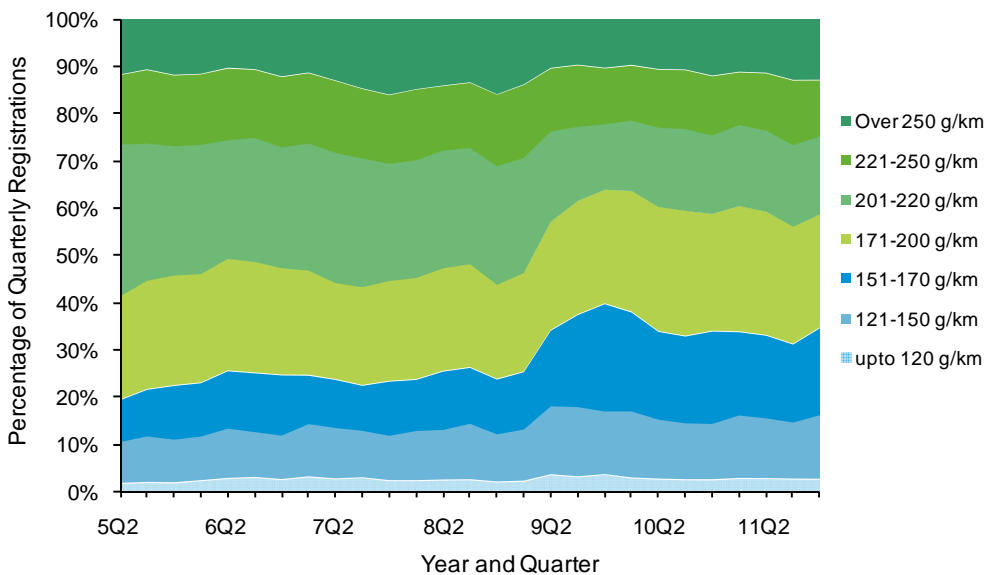
Imported used petrol vehicles tend to be more CO<sub>2</sub> efficient than New Zealand-new petrol vehicles (see Figure 3 on page 5). Figure 6a shows that the number of registrations picked up after the low point early in 2009. Figure 6b shows that the percentage of fuel efficient vehicles entering the fleet showed little change from 2005 to 2008, but increased markedly in 2009, possibly in response to economic circumstances. That percentage has been close to static from 2010 onwards.

To enable the CO<sub>2</sub> values for used vehicles to be compared with new vehicles (shown in Figures 5a and 5b on page 8), their figures have been converted from Japanese warm-start test values to European cold-start values.

**Figure 6a : Used import light petrol registrations  
CO<sub>2</sub> emissions per km driven**



**Figure 6b : Percentage of used import light petrol registrations  
CO<sub>2</sub> emissions per km driven**



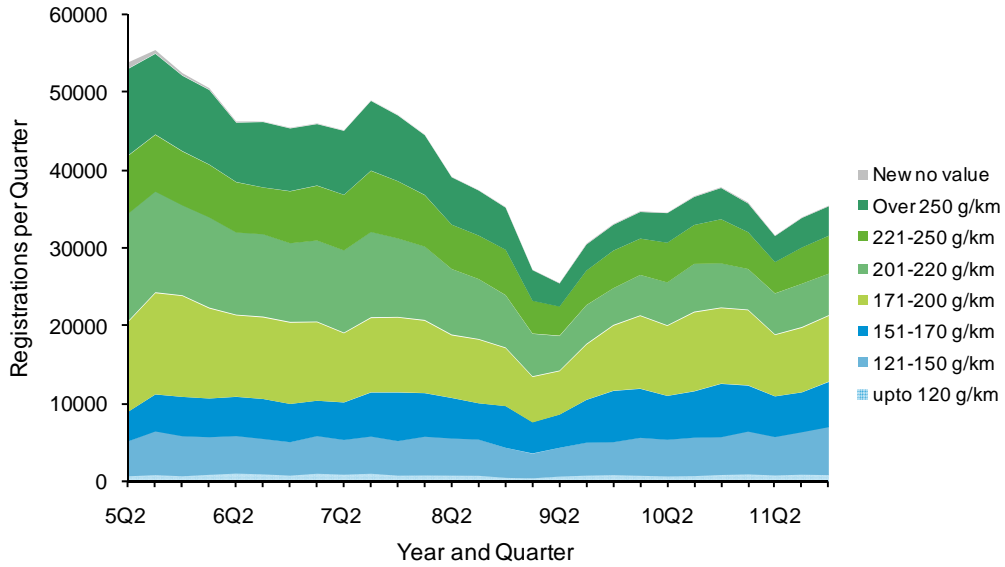
Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec

## CO<sub>2</sub> emissions of all petrol light vehicle registrations

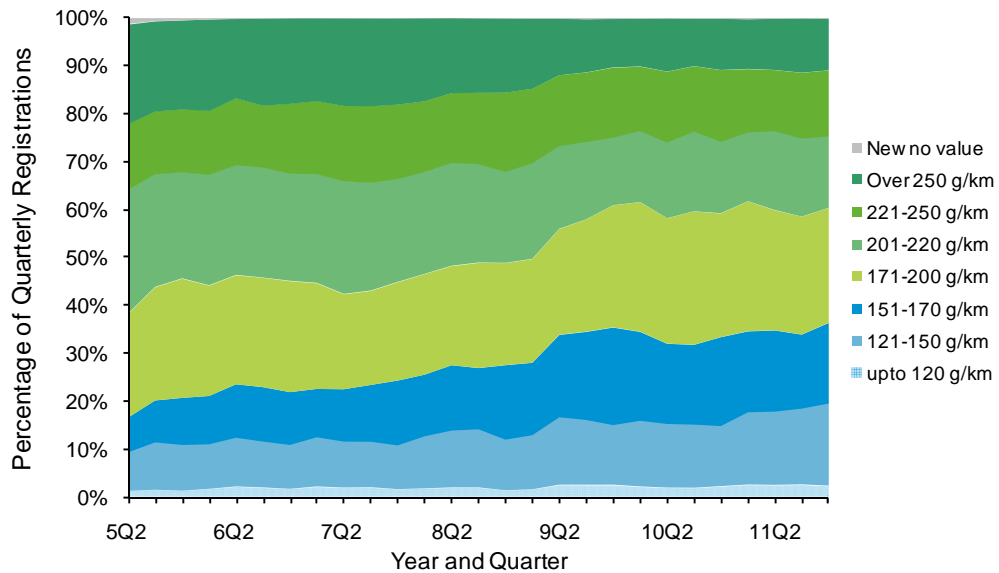
Figure 7a shows the drop in light petrol vehicle sales in 2008, and the subsequent partial recovery.

Figure 7b shows that since 2005 there was a general trend towards buying more fuel efficient vehicles, but this plateaued in 2010 and 2011.

**Figure 7a : New and used light petrol registrations  
CO<sub>2</sub> emissions per km driven**



**Figure 7b : Percentage of new and used light petrol registrations  
CO<sub>2</sub> emissions per km driven**

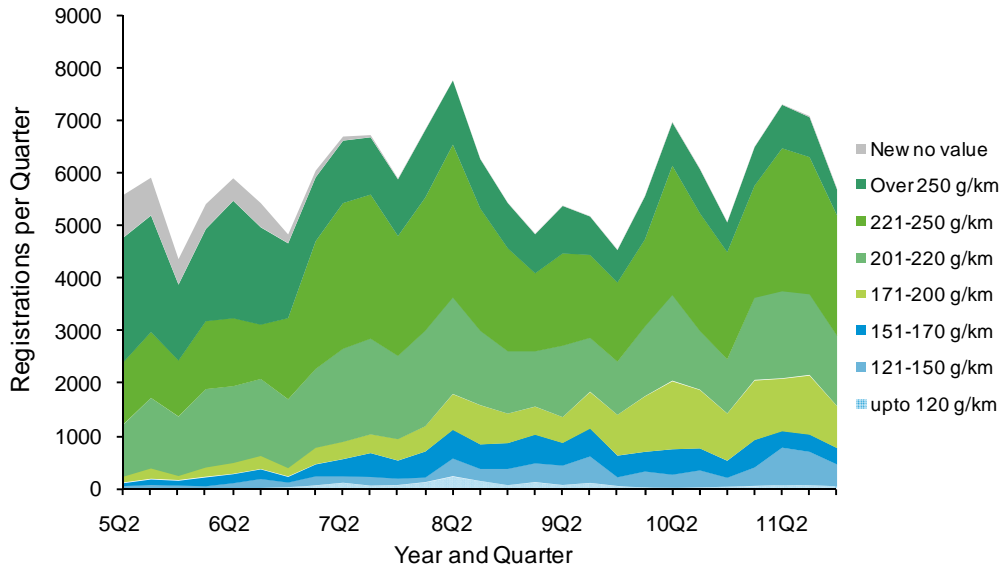


Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec

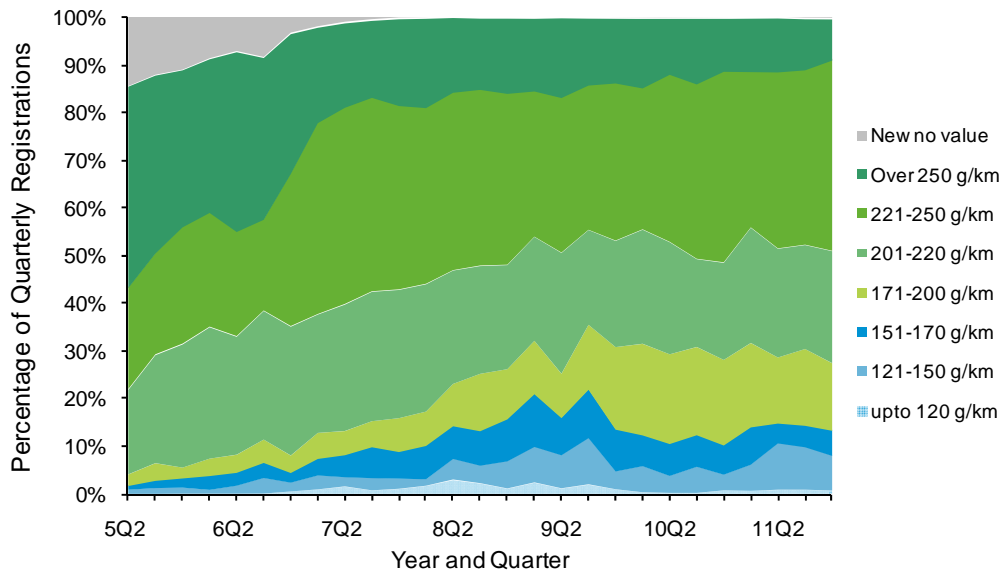
### CO<sub>2</sub> emissions of new diesel light fleet registrations

Figure 8a shows that registrations of the least CO<sub>2</sub> efficient diesel vehicles (over 250g CO<sub>2</sub>/km) have dropped. However, registrations of diesels under 170g CO<sub>2</sub>/km are limited, but increased again in 2011 after dropping in 2010. Light diesel vehicle sales continue to be mainly light commercial vehicles (vans and utes) and sports utility vehicles (SUVs) and seasonal, reflecting tax and business cycles.

**Figure 8a : New light diesel registrations  
CO<sub>2</sub> emissions per km driven**



**Figure 8b : Percentage of new light diesel registrations  
CO<sub>2</sub> emissions per km driven**

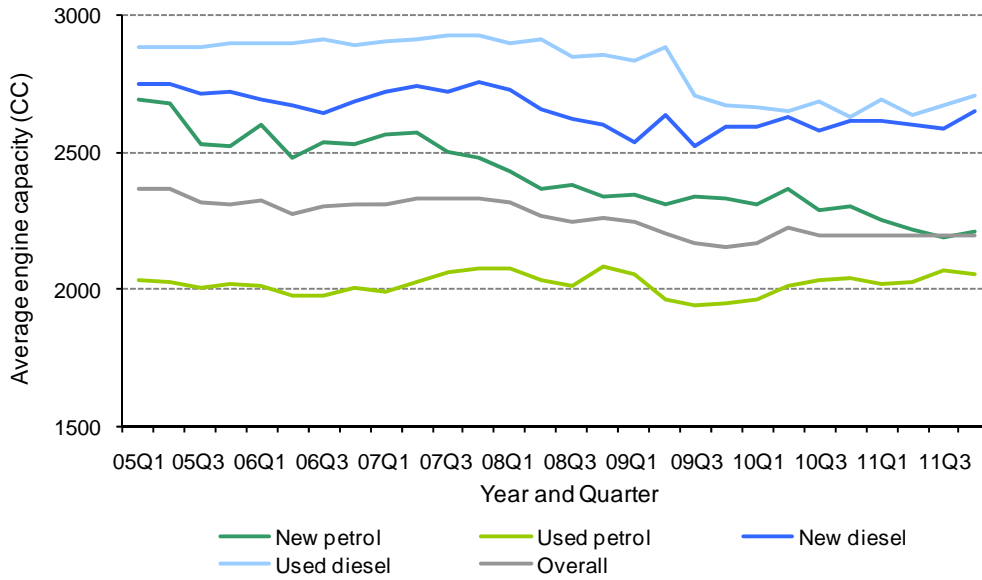


Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec

## The engine size of light fleet registrations

The engine capacity of new petrol vehicle registrations has been trending down, but the engine capacity of used petrol vehicles has hardly varied since 2005. The capacity of new diesel engines increased slightly late in 2011, after dropping in late 2010 and early 2011. Figure 9 shows that the most economical used petrol vehicles are making up a larger share of the diminished volume of registrations.

**Figure 9 : Engine size of vehicles entering the light fleet**



Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec

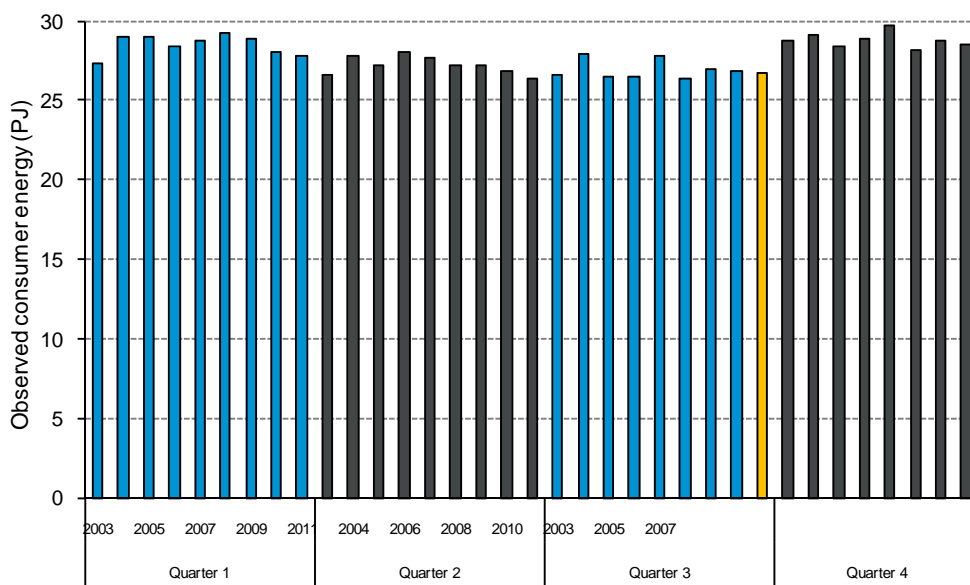
## Petrol and diesel deliveries

This section of the report is one quarter behind the other data as it takes longer for the fuel data to become available. It covers the period Quarter 1 2003 to Quarter 3 2011. Fuel deliveries have seasonal patterns, so quarterly comparisons should be made with the same quarter in other years.

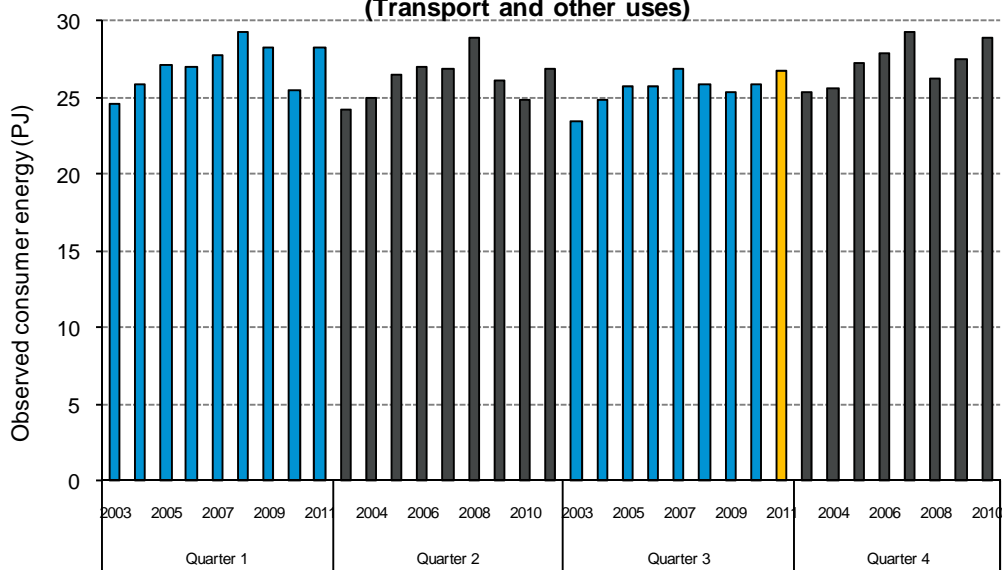
Petrol deliveries in Quarter 3 of 2011 were down on the corresponding quarter in 2010, but diesel deliveries were up. Figure 13a on page 16 shows that heavy vehicle travel increased during 2010Q1 to 2011Q2 relative to the same quarters a year before.

Diesel deliveries have been increasing far more than petrol. One reason for this is that an increasing proportion of the light fleet is diesel powered, but it is also important to remember that diesel is used in many non-transport areas of the economy including agriculture, mining, forestry, fishing, industrial and at times electricity generation. These fuel delivery figures include those uses. The Ministry of Economic Development and Statistics New Zealand have identified the transport/non-transport use of diesel more exactly, and their report is available at [http://www.med.govt.nz/templates/MultipageDocumentTOC\\_42502.aspx](http://www.med.govt.nz/templates/MultipageDocumentTOC_42502.aspx).

**Figure 10a : Quarterly petrol deliveries**



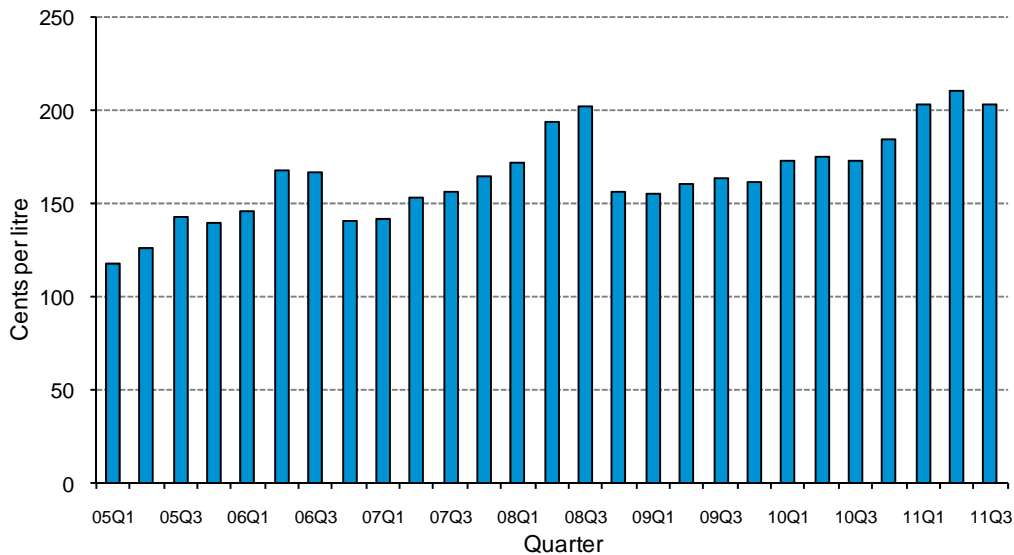
**Figure 10b : Quarterly diesel deliveries (Transport and other uses)**



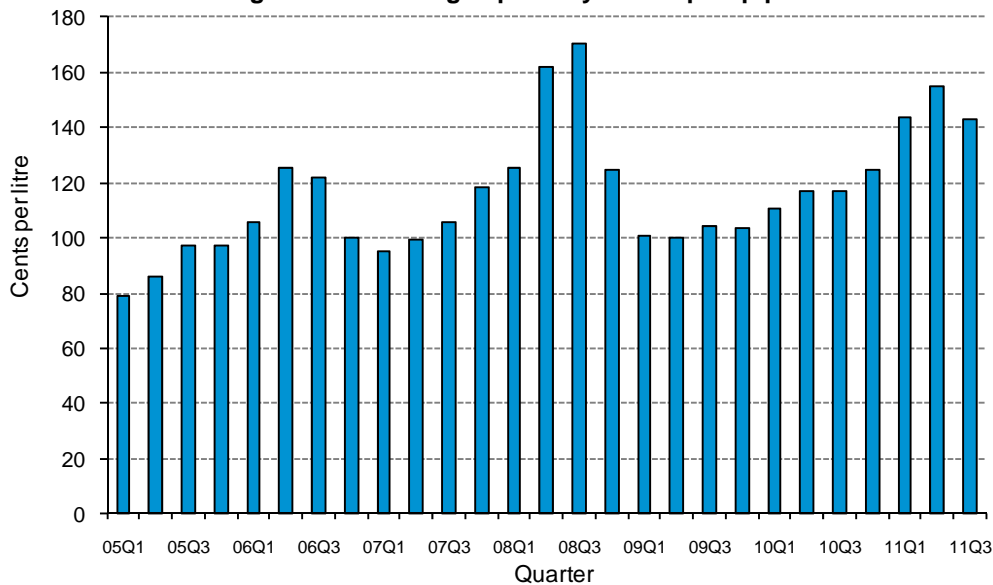
## Petrol and diesel pump prices<sup>1</sup>

Pump prices increased considerably in 2008, then dropped back in the final quarter of that year. Prices were fairly flat throughout 2009, but have been increasing since then. Average quarterly pump prices in 2011 have been higher than the 2008 quarterly peak, albeit marginally in quarters 1 and 3. The average petrol pump price for the second quarter of 2011 was a record. The prices shown are pump prices, and are not adjusted for subsequent inflation.

**Figure 11a : Average quarterly regular petrol pump price**



**Figure 11b : Average quarterly diesel pump price**



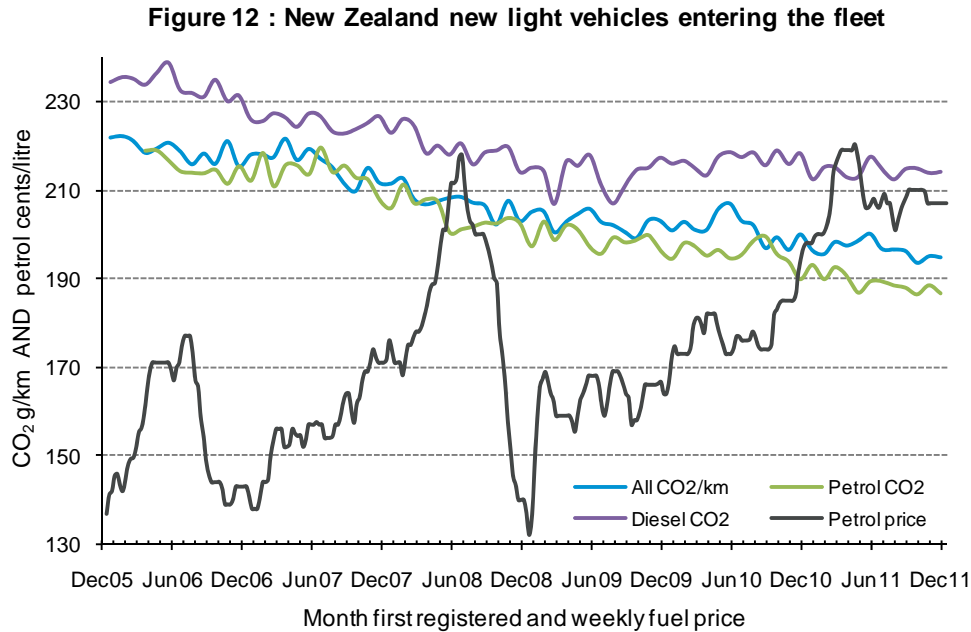
Q1=Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec

<sup>1</sup> Source Ministry of Economic Development (MED) website  
[http://www.med.govt.nz/templates/ContentTopicSummary\\_\\_\\_\\_21609.aspx](http://www.med.govt.nz/templates/ContentTopicSummary____21609.aspx)

## CO<sub>2</sub> emissions of new light vehicles entering the fleet versus fuel prices<sup>2</sup>

The average fuel efficiency of new light vehicles entering the light fleet improved as fuel prices increased in 2008, and continued to improve slightly in 2009. After the deterioration in mid-2010, fuel economy settled at a new lower level, until it dropped slightly late in 2011. The improvement late in 2011 has come about from improvement in the petrol vehicles entering the fleet.

Figure 12 shows the average CO<sub>2</sub> g/km of the New Zealand-new vehicles that entered the light fleet each month, and average weekly regular petrol prices. The grams of CO<sub>2</sub> per km driven were as high as 222 g/km in early 2006, and have been in the 195–200 g/km range in 2011.

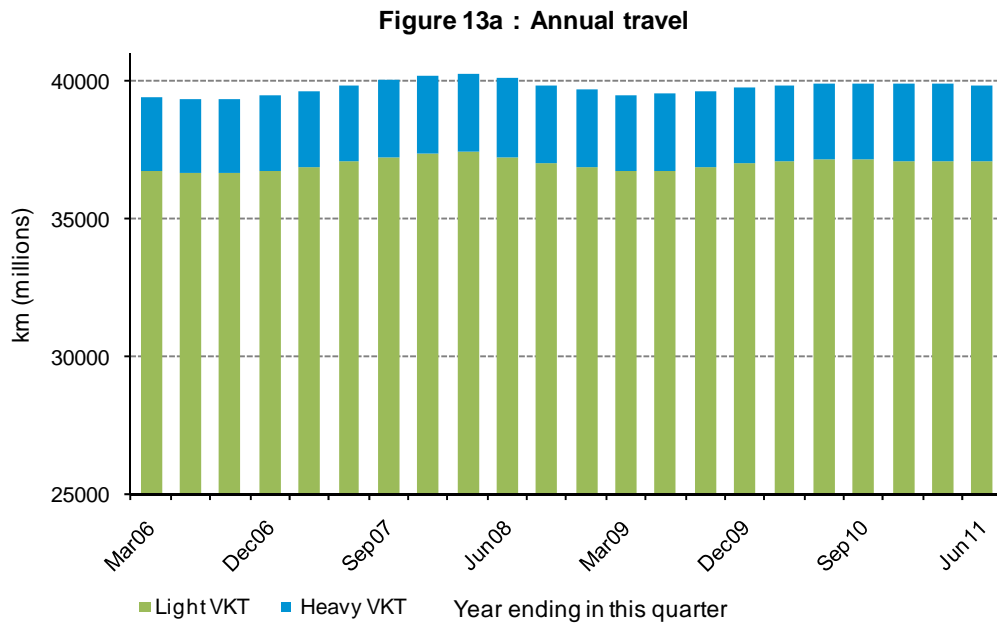


<sup>2</sup> Source Ministry of Economic Development (MED) website  
[http://www.med.govt.nz/templates/ContentTopicSummary\\_\\_\\_\\_20094.aspx](http://www.med.govt.nz/templates/ContentTopicSummary____20094.aspx)

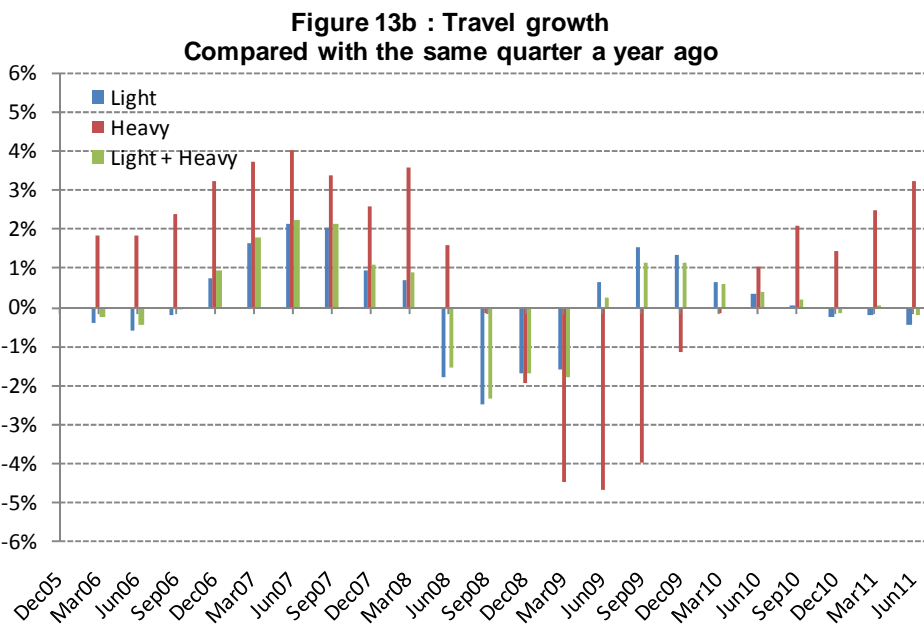
## Travel

Figure 13a shows estimates of annual national travel. The estimates are established by analysing the odometer readings recorded at warrant of fitness (WoF) and certificate of fitness (CoF) inspections over the last year. The estimates shown in Figure 13a are for the 12 month period ending at the end of the indicated month.

This data lags the report period by 6 months, as warrant of fitness and certificate of fitness inspections are needed after the end of the period being analysed in order to estimate travel. The recent estimates may change a little as more inspection odometer readings are collected.



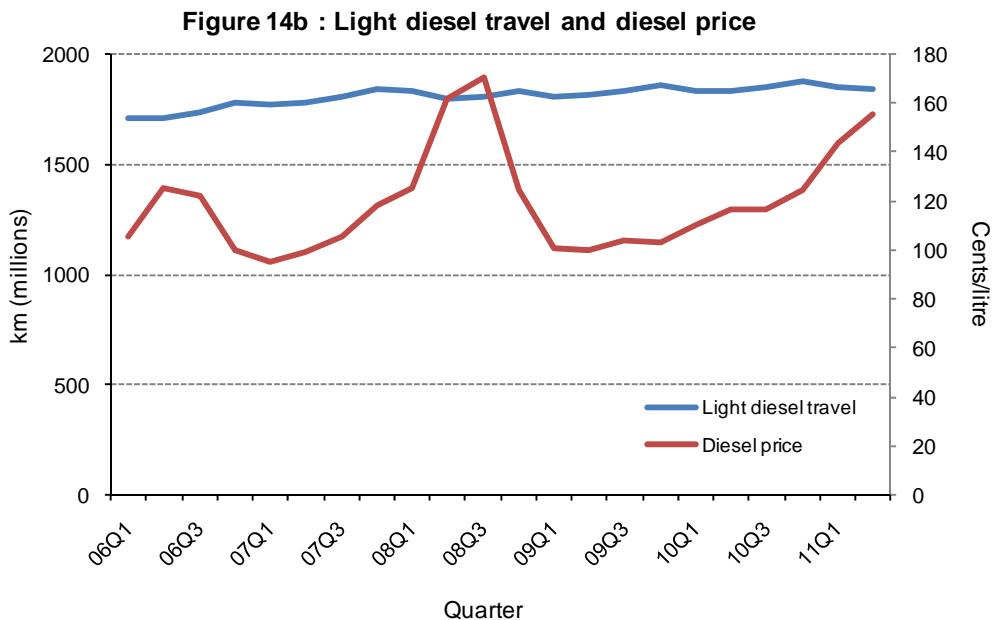
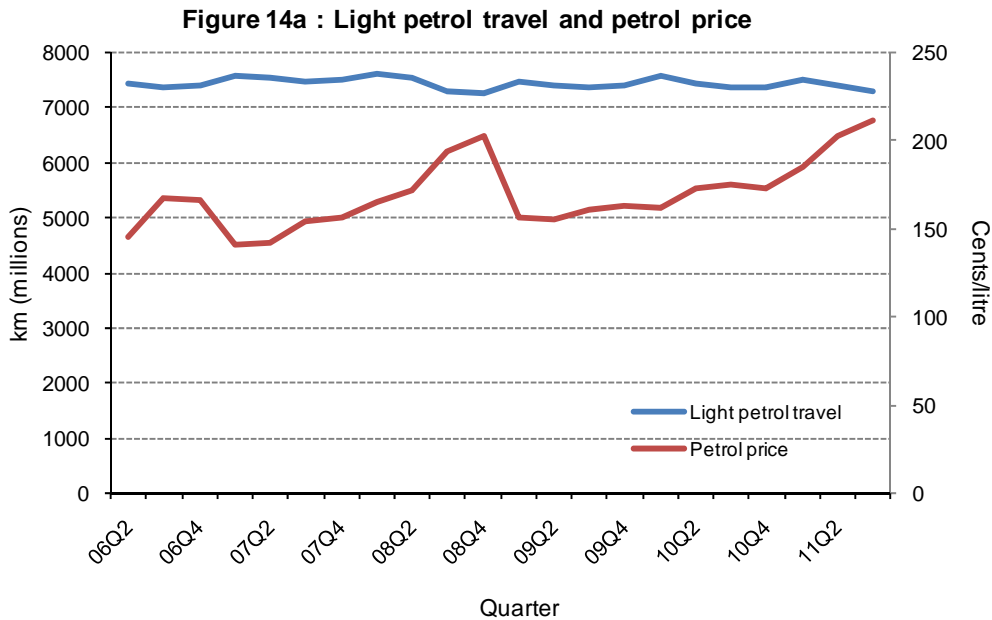
The significant decline in heavy vehicle travel during Dec 2008–Sep 2009, compared with the same quarters a year before, was the result of the economic downturn. Heavy vehicle travel rebounded in 2010, and was close to the record 2008 levels by June 2011.



## Travel and fuel prices

Short-term demand for light vehicle travel is only slightly affected by fuel price in New Zealand. Figures 14a and 14b show the limited change in travel volume during the 2008 price spike. Despite changes to fuel prices and the economic situation, overall light vehicle travel has been close to constant.

This data lags the report period by 6 months, as warranty of fitness and certificate of fitness inspections are needed after the end of the period being analysed in order to estimate travel. The recent estimates may change a little as more inspection odometer readings are collected.



## Purchase of road user charges

Vehicles with a gross vehicle mass over 3.5 tonnes, or powered by a fuel other than petrol (for example diesel or electricity) pay for their use of the roads via road user charges (RUC).

The graph shows heavy vehicle road user charges (vehicles over 3.5 tonnes) and light vehicle road user charges (vehicles under 3.5 tonnes) distance purchases separately. Almost all light road user charges are from diesel powered vehicles.

Road user charges licences can be purchased in advance and the graph shows the two spikes in light vehicle road user charges purchases, when price increases were expected, which were then followed by a drop in purchases. This means quarterly light vehicle road user charges purchases are only indicative of travel and the long-term trend is the more meaningful measure. The long-term trend is an average of the value for the quarter plus the two preceding and two subsequent quarters.

Interestingly, because of their far greater numbers, light diesel vehicles travel further in aggregate than heavy vehicles, although the heavy vehicles use more fuel overall.

