

# Overview of Singapore's Vehicle Emissions Policies for Heavy Goods Vehicles (HGVs)

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# Strategies to Control of Pollution from Vehicles

## New Vehicles (Pre-Purchase)

**Approval & Registration**

- New vehicles can only be approved for sale and registered, if they comply with emissions standards for new vehicles (Euro VI)

Emission standards for new vehicles ensure vehicle produces low emissions by construction

## In-Use Vehicles

**Fuel Standards**

- Euro V Fuel

**Vehicles In Use**

- In-Use emissions standards apply

Emissions Standards for vehicles in-use ensure vehicles are maintained throughout their lifespan

## Deregistration of Vehicles

**Annual or Bi-annual Inspection (Emission Test) (40 HSU)**

**Enforcement Against Smoky Vehicles**

**Enforcement Against Idling Vehicles**

**Deregistration**

- Statutory Lifespan
  - Commercial vehicles and private buses: 20 years
  - Public buses: 17 years
- Financial incentives to Encourage Early Turnover
  - Early Turnover Scheme (ETS)

\*WHSC (World Harmonised Stationary Cycle) and WHTC (World Harmonised Transient Cycle) are international testing procedures for heavy-duty diesel vehicles to prove compliance with Euro VI emission standard.

# New Emissions Standards for HGVs

- Since 1 Jan 2018, all diesel HGVs and buses are required to **comply with Euro VI emission standard**

Euro Standard	Implementation date in Singapore	Test cycle	CO (g/kWh)	HC (g/kWh)	NOx (g/kWh)	PM (g/kWh)	PN (#/km)
Euro VI	1 Jan 2018	WHTC*	4.0	0.16	0.46	0.01	6.0x10 <sup>11</sup>
		WHSC*	1.5	0.13	0.4	0.01	8.0x10 <sup>11</sup>

## Considerations on Euro VI Implementation Timeline

### 1. Fuel quality

- Minimum quality for Euro VI vehicles is Euro V fuel (Directive 2009/30/EC)
- Need to ensure availability of appropriate fuel (Euro V fuel), which was tightened by Jan 2017 in Singapore
- Industry highlighted the importance of fuel quality to comply with the Euro VI emission standards, which prevents more frequent maintenance and engine damage

### 3. EU implementation date for Euro VI emission standards

- EU implemented Euro VI since 1 Sep 2015
- Industry gave feedback that they required a minimum of 2 years' grace period after EU implementation date for local motor traders to supply vehicles complying with the particular EU emission standards

# Fuel Quality Standards for HGVs

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- Singapore has implemented the **Euro V fuel quality standards for diesel vehicles** since 1 Jan 2017

Property	Singapore specification (Euro V)
Cetane Number, min	51
Density @ 15°C, max (kg/m <sup>3</sup> )	845
Sulphur, max (ppm)	10
Polyaromatics, max (wt%)	8
T95, max (°C) <sup>63</sup>	360
Fatty-acid methyl ester (FAME), max (%v/v)	7
Manganese content (g/l)	0.002

# In-Use Emissions Standards for HGVs

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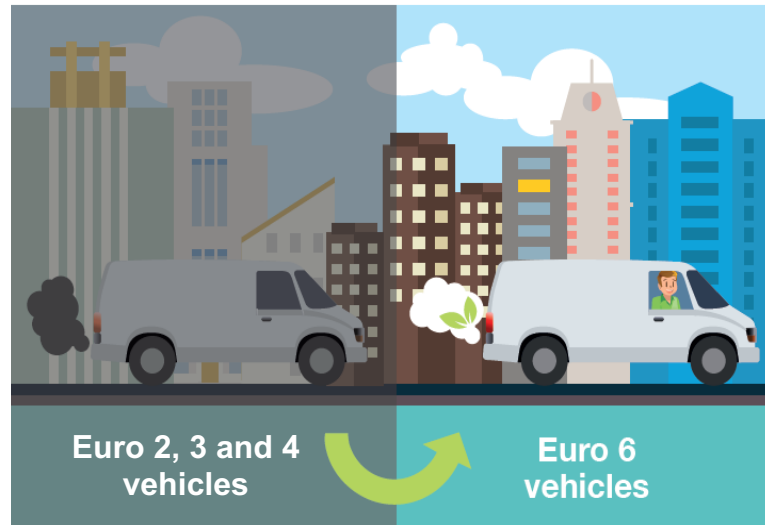
- All in-use diesel HGVs and buses are required to undergo mandatory periodic inspections (annual or bi-annual) and **pass a smoke emissions test**
- Since 1 Jan 2014, the in-use exhaust emission standard is a **smoke opacity limit of 40 Hartridge Smoke Units (HSU)**



# Early Turnover Scheme (ETS)

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- ETS encourages owners of older diesel commercial vehicles and buses (including HGVs) to replace them with cleaner new vehicles that complies with the prevailing emission standards.
- Owners enjoy ETS incentive as a discount off the replacement vehicle's Certificate of Entitlement (COE\*) price.
  - ETS incentives are higher if owners turnover the vehicle earlier ahead of its statutory lifespan of 20 years, and if the replacement vehicle has zero tailpipe emissions, e.g. electric vehicles (EVs).
- In addition to Euro II and III vehicles, ETS was extended to the turnover of Euro IV vehicles from 1 Apr 2021.



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