



VEHICLE INSPECTION AND MAINTENANCE IN ASIA

POLICY PROFILE: MALAYSIA



POLICIES AND STANDARDS FOR ROAD VEHICLES

EMISSION STANDARDS for NEW VEHICLES

Euro 1	1997 - 2009
Euro 2	Since 2009 Goal to have all diesel vehicles Euro 2 nationwide in 2016
Euro 3	Goal to have motorcycles Euro 3 compliant nationwide in 2016
Euro 4	Goal to have petrol vehicles Euro 4 compliant nationwide in 2016

Source:
UNEP Partnership for Clean Fuels and Vehicles. Jan 2016, June 2015, April 2014, March 2012. Latest compilation [here](#).

FUEL QUALITY STANDARDS

Sulfur in diesel	500 ppm
Sulfur in petrol	50 ppm
Lead in gasoline	Unleaded since 1999
Euro 4 for all petrol and diesel by 2018 Euro 5 specifications for diesel fuel targeted by 2020	

Source:
Borneo Post. 2015 December 20. Link [here](#).

ROAD VEHICLE POLICIES and PLANS

Policy reference

Vehicle manufacture	<ul style="list-style-type: none"> Promotion of competitive automotive sector, particularly for national manufacturers (Proton & Perodua) 	<i>National Automotive Policy Framework (2014)</i>
Vehicle registration	<ul style="list-style-type: none"> All motor vehicles required to register, periodic inspection required for commercial vehicles 	<i>Road Transport Act of 1987 (Act 333) with amendments up to 01 July 2006</i>
Alternative fuels	<ul style="list-style-type: none"> Diesel for land and sea transport to be a blend of 5% processed palm oil and 95% petroleum diesel B5 diesel made available country-wide 	<i>National Biofuel Policy of 2006</i>
Alternative vehicles	<ul style="list-style-type: none"> Government targeting for Malaysia to become a regional hub for manufacture of energy efficient vehicles (EEVs); to penetrate regional & global markets by 2020 Electric Mobility Flagship Programme aims to have 200,000 EV (includes buses, cars and scooters) & 125,000 public charging stations by 2020 Implementation of Energy-Efficient Vehicles (EEV) will be based on fuel consumption specification (l/100km) and carbon emission (gCO₂/km) will only be used once the Euro 4 fuel quality standard is introduced. 	<i>National Automotive Policy 2014</i>
Market-based initiatives	<ul style="list-style-type: none"> Since 2009, hybrid cars receive 100% tax exemption of import duty and 50% exemption of excise duty Import tax and excise duty exemption for CKD hybrid (from 1 January 2014 until 31 December 2015) and CKD EVs (from 1 January 2014 until 31 December 2017) Applicable to vehicles which comply UN definition; limited to new CBU hybrid passenger cars with engine capacity of < 2,000 cc and minimum Euro 3 technology Hybrid cars to be certified by the Road Transport Department for at least 50% increase in city-fuel economy, or at least 25% increase in combined city and highway fuel economy 50% discount on road taxes for natural gas vehicles 25% discount on road taxes for bio-fuel vehicles 	<i>National Automotive Policy 2014. See also here.</i>
Retrofitting or engine conversion, pollution control devices	<ul style="list-style-type: none"> No import duties and offers sales tax exemption on conversion kits for natural gas Since 2006, promotion of CNG vehicles via retrofitting or after-market conversion Developing new higher efficiency mono fuel direct injection CNG (CNG/ DI) engines Conversion of gasoline engines into bi-fuel engines done by manufacturers 	
Used/ auctioned vehicles	<ul style="list-style-type: none"> Currently allowed, inspection certificate as a required document prior to sale Holders of open approved permits have grown the used-car dealership industry, but are currently shifting/ diversifying out of the business 	<i>Link 1 Link 2</i>

Vehicle Retirement & Replacement	<ul style="list-style-type: none"> Min. of Transport distributed more than 2,000 gas converter kits since 2006 to taxi and public microbus operators where CNG supply is available Currently there are 2.7 million passenger vehicles of 10 years or older on the road. Has a very low vehicle scrap rate and high average vehicle age 	<i>National Automotive Policy Review, 2009. Link here.</i>
Scrappage	<ul style="list-style-type: none"> Scrappage program was introduced. Launched in 2009, a scrappage scheme paying owners of vehicles at least 10 years old MR5,000 (\$1,354) was shared equally by the government and auto makers This has been replaced with the Voluntary Vehicle Inspection Programme (VVIP) government intends to implement the end-of-vehicle-life (EVL) policy in 2015 or 2016 with the initial target of scrapping vehicles of 20 years or older 	<i>Press Digest - Govt aims to implement new end-of-vehicle-life policy in 2015 / 2016. Link here.</i>

Sources:

1. UNEP-PCFV - Asia and Pacific Vehicle Standards and Fleets (last updated November 2011). Link [here](#).
2. UNEP-PCFV - Status of Fuel Quality and Vehicle Emission Standards in Asia-Pacific (last updated June 2015). Link [here](#).
3. Road Transportation Act of 1987 (Act 333) with amendments up to 01 July 2006. Link [here](#).
4. National Automotive Policy 2014
5. Improving Vehicle Fuel Economy in the ASEAN (July 2010). Link [here](#).
6. National Automotive Policy Framework (October 2005). Link [here](#).
7. An experimental investigation of CNG as an alternative fuel for a retrofitted gasoline vehicle (2006). Link [here](#).
8. Malaysia targets alternative fuels market (December 2006). Link [here](#).
9. Article: Scrap policy must for old vehicle ban. 2015. Link [here](#).
10. Press Digest - Govt aims to implement new end-of-vehicle-life policy in 2015 / 2016. Link [here](#).
11. National Biofuel Policy of 2006. Link [here](#).

IMPORTATION STANDARDS & POLICIES

Imported NEW vehicles	Must meet emission standards prescribed in the 1996 Environmental Quality Regulations Approval permit (AP) system which limits imported total market value for complete built-up units
Conditions for USED vehicle importation	Importation of used vehicles (commercial, passengers and motorcycles) has been planned to be terminated by 31 December 2015.
Import of MUVs, etc	Same AP system and emission standards
Banned vehicles	Used commercial vehicles prohibited effective 1 January 2016 Gradual phase out of imports of used parts/ components as well as used commercial vehicles
# of imported USED vehicles	No specific data

Sources:

1. UNEP-PCFV - Asia and Pacific Vehicle Standards and Fleets (last updated November 2011). Link [here](#).
2. National Automotive Policy Framework (October 2005). Link [here](#).
3. Review of National Automotive Policy (October 2009) -Link [here](#).
4. Compilation of Foreign Motor Vehicle Import Requirements (December 2011) - Link [here](#).

EMISSION STANDARDS FOR NEW AND IN-USE VEHICLES

NEW GASOLINE vehicles (Spark ignition Engines) - Petrol

Light-Duty Vehicles					
Age	Vehicle Type	Reference Mass (kg)	CO	HC + NOx	PM
			(g/km)		
New models of Motor Vehicles on or after 01 January 2000	total mass < 2.5 tonnes		2.2 g/km	0.5 g/km	-
	Petrol engine used for carrying goods and having a maximum weight not exceeding 3.5 tonnes	≤ 1250	2.72 g/km	0.97 g/km	-
		1250 < RM ≤ 1700	5.17 g/km	1.40 g/km	-
		1700 < RM	6.90 g/km	1.70 g/km	-
New models of Motor Vehicles on or after 01 January 1997	total mass < 2.5 tonnes		2.72 g/km	0.97 g/km	-
	Petrol engine used for carrying goods and having a maximum weight not exceeding 3.5 tonnes	≤ 1250	2.72 g/km	0.97 g/km	-
		1250 < RM ≤ 1700	5.17 g/km	1.40 g/km	-
		1700 < RM	6.90 g/km	1.70 g/km	-

NEW DIESEL Vehicles (Compression Ignition Engines)

Light-Duty Vehicles

Vehicle Type	Reference Mass (kg)	CO	HC+NOx	NOx	PM	PN
		(g/km)				
Light duty passenger cars		0.50	0.30	0.25	-	-
Diesel engine vehicle having a total mass < 3.5 tonnes	≤ 1250	2.72	0.97	-	0.14	-
	1250 < RM ≤ 1700	5.17	1.40	-	0.19	-
	1700 < RM	6.90	1.70	-	0.25	-

Heavy-Duty Engines

Vehicle Type	CO	HC	NMHC	CH ₄	NOx	PM	SMOKE
	(g/kWH)						(1/m)
Diesel engine having a total mass exceeding 3.5 tonnes	4.5	1.1	-	-	8.0	0.36	

EMISSION STANDARDS FOR IN-USE VEHICLES

GASOLINE vehicles (Spark ignition Engines) - Petrol

2-wheelers	2-stroke, via Idle Test	8 CO (g/km) 4 HC (g/km) 0.1 NOx (g/km)
	4-stroke, via Idle Test	13 CO (g/km) 3 HC (g/km) 0.3 NOx (g/km)
Existing model	Idle test	4.5 % CO 800 ppm HC
New model (motor vehicle equipped with an engine type which is different from the previous model)		3.5 % CO 600 ppm HC

Reference Policies/ Sources:

1. Environmental Quality (Control Of Emission From Diesel Engines) Regulations 1996 PU(A) 429/1996
2. Improving Vehicle Fuel Economy in the ASEAN (July 2010). Link [here](#).
3. Environmental Quality (Control Of Emission From Petrol Engines) Regulations 1996 PU(A) 543/1996
4. News article by Zazali Musa, "New ruling on smoke emission." The Star - Feb 2014. Link [here](#).

DIESEL vehicles

Diesel engine at steady speed, and all heavy duty diesel engines	Free acceleration method	Permissible limit for black smoke levels - 40 HSU	
	Ringelmann smoke chart	Shall not exceed Ringelmann No. 2 for a continuous period of > 10 seconds as per specified procedure	
Heavy duty diesel engines, vehicle ≤ 3.5 tonnes GVW	Reference Mass (rw)	CO g/test	HC + NOx in g/test
	rw ≤ 1020 kg	58	19.0
	1020 kg < rw ≤ 1250 kg	67	20.5
	1250 kg < rw ≤ 1470 kg	76	22.0
	1470 kg < rw ≤ 1700 kg	84	23.5
	1700 kg < rw ≤ 1930 kg	93	25.0
	1930 kg < rw ≤ 2150 kg	101	26.5
	2150 kg < rw	110	28.0

Heavy duty diesel engines, vehicle > 3.5 tonnes GVW	14 g/kWH CO	18 g/kWH NO _x
<p><i>Reference Policies/ Sources:</i></p> <ol style="list-style-type: none"> 1. <i>Environmental Quality (Control Of Emission From Diesel Engines) Regulations 1996 PU(A) 429/1996</i> 2. <i>Improving Vehicle Fuel Economy in the ASEAN (July 2010). Link here.</i> 3. <i>Environmental Quality (Control Of Emission From Petrol Engines) Regulations 1996 PU(A) 543/1996</i> 4. <i>News article by Zazali Musa, "New ruling on smoke emission." The Star - Feb 2014. Link here.</i> 		

INSPECTION AND MAINTENANCE INFRASTRUCTURE

IN-USE VEHICLE INSPECTION SCHEDULES

CATEGORY		EMISSION TESTS	SAFETY/ ROADWORTHINESS
Passenger vehicles	Private	Voluntary Vehicle Inspection Policy; For vehicles aged 5 and older, mandatory annual inspections as a requirement for road tax renewal (from NAP 2014). Previous NAP 2009 required inspection of vehicles aged 15 yrs and above	Voluntary, but required when: <ul style="list-style-type: none"> • The vehicle engine's capacity has been changed • The vehicle transfers ownership • A vehicle is adapted for LPG (liquid petroleum gas) • The registration number on a vehicle is changed • The road tax has been out of date for more than one year • A vehicle is imported • A person wishes to purchase a used vehicle using a loan
	Commercial, new (after 1995)	First 2 years: annually Subsequent: every 6 months	First 2 years: annually Subsequent: every 6 months
	Commercial, old	Every 6 months	Every 6 months
Heavy-duty vehicles	Private		Voluntary
	Commercial, new (after 1995)	First 2 years: annually Subsequent: every 6 months	First 2 years: annually Subsequent: every 6 months
	Commercial, old	Every 6 months	Every 6 months

Notes: commercial vehicles include goods vehicle (e.g. lorries, trailers), public service vehicles (e.g. 3-wheelers, taxis, buses, minivans), driving school vehicles, special use vehicles (e.g. ambulances, fire trucks, heavy mobile machinery)
Details on inspection schedule for different types of commercial vehicles provided [here](#).

Sources:

1. *Improving Vehicle Fuel Economy in the ASEAN (July 2010). Link [here](#).*
2. *Review of National Automotive Policy (October 2009). Link [here](#).*
3. *Road Transport Act of 1987 (Act 333) with amendments up to 01 July 2006*
4. *Vehicle Roadworthiness Tests in Malaysia. Link [here](#).*
5. *Inspection Frequency. Link [here](#).*
6. *Motor Vehicles (Periodic Inspection, Equipment and Inspection Standards) Rules 1995*
7. *Vehicle Inspection in Malaysia (December 2001). Link [here](#).*
8. *Vehicle I&M in Asia: Status and Challenges. Clean Air Asia. Presentation at the Better Air Quality Conference 2012. Link [here](#).*
9. *Environmental Quality (Control of Petrol and Diesel Properties) Regulation P.U. (A) 145/2007*
10. *Environmental Quality (Control of Emission from Petrol Engines) Regulation 1996 P.U.(A) 543/96*
11. *Environmental Quality (Control of Emission from Diesel Engines) Regulation P.U.(A) 429/96*

INSPECTION INFRASTRUCTURE

Type of system	<input checked="" type="checkbox"/> Centralized <input type="checkbox"/> Decentralized Only one company providing inspection	<input type="checkbox"/> Government <input checked="" type="checkbox"/> Privatized
Scope of implementation	<input checked="" type="checkbox"/> National, for commercial vehicles	
Financial model	Emissions testing: commercialized Testing rates provided in Puspakom website (about RM 20-80)	Owners pay for testing, with discussions on incentives such as possible road tax rebate
Inspection scheme	Prohibition order shall be issued and attached on windshield for vehicles with smoke test > 70 HSU	
Compulsory?	Voluntary for private vehicles; emission testing is not required with annual vehicle registration. See Voluntary Vehicle Inspection Program (VVIP) under National Automotive Policy of 2014. Periodic inspection required for commercial vehicles with high kilometrage	

Number of testing centers	Currently, around 55 centers across Malaysia Under PUSPAKOM - Pusat Pemeriksaan Kenderaan Berkomputer - private inspection company Other inspection companies include SGS and VLT Test Systems Malaysia Sdb Bhd in Puchong
Number of testing lanes	unclear from public domain research, but essentially testing lanes in 55 PUSPAKOM centers, catering to 29 locations, with > 3 million examinations per year
Accreditation	PUSPAKOM accreditation: MS ISO/ IEC17020 Department of Standards Malaysia, supported by concession agreement with Ministry of Transport and MOU agreement with Ministry of Domestic Trade, Cooperative and Consumerism
Auditing	Third party ISO audits, e.g. SIRIM QAS Road Transport Department oversees vehicle safety inspections Department of Environment oversees exhaust emission testing
Future plans	Estimated 300 inspection centers needed

Sources:
Road Transport Act of 1987 (Act 333) with amendments up to 01 July 2006. Link [here](#); *Environmental Quality (Control of Emission From Diesel Engines) Regulations 1996 - Pu(A) 429/1996; National Automotive Policy of 2014;*
Ishak., A.2001. Presentation of Malaysia Department of Environment at GITE Regional Workshop on Vehicle Inspection and Maintenance Policy in Asia. Link [here](#).
Yahaya et al. n.d. Towards Sustainable Transport Systems: Malaysian Experience. Link [here](#).

MAINTENANCE & REPAIR INFRASTRUCTURE		
Type of system	<input type="checkbox"/> Centralized <input checked="" type="checkbox"/> Decentralized	<input type="checkbox"/> Government <input checked="" type="checkbox"/> Privatized
Scope of implementation	<input type="checkbox"/> National	<input checked="" type="checkbox"/> Localized (privatized)
Independent of inspection centers?	Yes, maintenance carried out by authorized vehicle dealers as well as other authorized/ unauthorized/ informal vehicle repair centers	
Number of repair centers	Numerous, via authorized centers of manufacturers; also numerous informal vehicle repair centers	
Accreditation	Registered with the Road and Transport Department, however there are informal vehicle repair centers	
Auditing	Auto companies do the audit for their respective sellers	

ENFORCEMENT		
Type of system	<input type="checkbox"/> Centralized <input type="checkbox"/> Decentralized	<input checked="" type="checkbox"/> Government <input type="checkbox"/> Citizen
Nature of implementation	<input checked="" type="checkbox"/> National agency (mixed)	<input checked="" type="checkbox"/> Local government unit
Fines and penalties		
Enforcement agency	Various: State environment department, Land Public Transport Commission, traffic police, PLUS Bhd; Department of Energy's Mobile Squad conducts visual observation of vehicular emissions; Under the AWASI Program (Area Watch and Sanction Inspection) since 1995	
Roadside testing	Roadside inspection - random "spot checks" to supplement periodic inspection; road blocks set up to check black smoke emission from diesel vehicle exhausts; Inspection at toll plazas	