



الإمارات العربية المتحدة
وزارة الصناعة
والتكنولوجيا المتقدمة

Workshop

The Implementation of new vehicle emission limits in the UAE

تطبيق حدود انبعاثات المركبات الجديدة في الإمارات العربية المتحدة

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Online workshop



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The goal of this workshop is to clarify for manufacturers the **implement procedure** for the UAE requirements regarding emissions from gasoline or diesel light and heavy vehicle.



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Emission for passenger cars and light duty vehicles

Applicability.

Apply to all vehicles. with a reference mass not exceeding 2610 kg. and shall apply, at the manufacturer's request, to motor vehicles with a reference mass not exceeding 2,840 kg.

Fuels.

standards for diesel and gasoline fuels (≤ 10 ppm S) according to:

UAE.S 477: 2021 Diesel (Gas Oil) Fuel - Requirements and test methods

UAE.S 5018-2021 Unleaded Gasoline - Requirements and Test Methods



Testing for passenger cars and light duty vehicles Emission

The following tests required for the approval

Spark ignition engines (petrol), including hybrids	Diesel engines only, including hybrids
PN limit 6.10^{11}	PN limit 6.10^{11}
<u>Evaporation test</u> (1 day diurnal)	
<u>Emission at idle</u>	
<u>Crankcase emission</u>	
Durability assessment	Durability assessment
Gaseous pollutants + PM + PN	Gaseous pollutants + PM + PN

- Tests shall be according UN/ECE R 83 .07:2015 or EU 715-2007.
- Manufacturer can be using WLTP type approval testing or using the NEDC test cycle
- For WLTP test should be according ECE 154.



Vehicles emission limits for passenger cars and light duty vehicles:

		Reference mass (RM) (kg)	Limit values													
			Mass of carbon monoxide (CO)		Mass of total hydrocarbons (THC)		Mass of non- methane hydrocarbons (NMHC)		Mass of oxides of nitrogen (NO _x)		Combined mass of hydrocarbons and oxides of nitrogen (THC + NO _x)		Mass of particulate matter (PM)		Number of particulates (PN)	
			L1 (mg/km)		L2 (mg/km)		L3 (mg/km)		L4 (mg/km)		L2 + L4 (mg/km)		L5 (mg/km)		L6 (#/km)	
Category	Class		PI	CI	PI	CI	PI	CI	PI	CI	PI	CI	PI1	CI	PI1,2	CI
M	—	ALL	1,000	500	100	—	68	—	60	80	—	170	4.5	4.5	6.0 × 10 ¹¹	6.0 × 10 ¹¹
N1	I	RM ≤ 1,305	1,000	500	100	—	68	—	60	80	—	170	4.5	4.5	6.0 × 10 ¹¹	6.0 × 10 ¹¹
	II	1,305 < RM ≤ 1,760	1,810	630	130	—	90	—	75	105	—	195	4.5	4.5	6.0 × 10 ¹¹	6.0 × 10 ¹¹
	III	1,760 < RM	2,270	740	160	—	108	—	82	125	—	215	4.5	4.5	6.0 × 10 ¹¹	6.0 × 10 ¹¹
N2	—	ALL	2,270	740	160	—	108	—	82	125	—	215	4.5	4.5	6.0 × 10 ¹¹	6.0 × 10 ¹¹

1 Positive ignition particulate mass and number limits shall apply only to vehicles with direct injection engines.

2 particulate number emission limits of 6.0×10^{12} #/km shall apply to PI direct injection vehicles upon the choice of the manufacturer.



OBD threshold limits

vehicles shall comply with the following OBD threshold limits:

		Reference mass (RM) (kg)	Mass of carbon monoxide		Mass of non-methane hydrocarbons		Mass of oxides of nitrogen		Mass of particulate matter ¹	
			(CO) (mg/km)		(NMHC) (mg/km)		(NOx) (mg/km)		(PM) (mg/km)	
Category	Class		PI	CI	PI	CI	PI	CI	CI	PI
M	—	All	1,900	1,750	170	290	150	180	25	25
N1	I	$RM \leq 1305$	1,900	1,750	170	290	150	180	25	25
	II	$1305 < RM \leq 1760$	3,400	2,200	225	320	190	220	25	25
	III	$1760 < RM$	4,300	2,500	270	350	210	280	30	30
N2	—	All	4,300	2,500	270	350	210	280	30	30

¹ Positive ignition particulate mass and number limits apply only to vehicles with direct injection engines.



Emission limits based on US standards for passenger cars and light duty vehicles

Vehicles meeting the pollutant limits based on US standards according to table 3 are to be accepted alternatively

Vehicle level Test as applicable (Chassis Cert)	Bin#	NMOG+NO _x , mg/mi (mg/km)	PM, mg/mi (mg/km)	CO, g/mi (g/km)	HCHO, mg/m (mg/km)
Passenger Cars & Light Duty Trucks (≤ 8500 lbs)	Bin 125	125 (78)	3 (1.86)	2.1 (1.3)	4 (2.49)
MDV Chassis Cert (≥ 8501 lbs up to 10000 lbs)	Bin 250	250 (155)	8 (4.97)	6.4 (3.98)	6 (3.73)
MDV Chassis Cert (≥ 10001 lbs up to 14000 lbs)	Bin 400	400 (249)	10 (6.21)	7.3 (4.54)	6 (3.73)
Engine Test as applicable		NO _x , g/bhp-hr (g/kWh)	PM, g/bhp-hr (g/kWh)	CO, g/bhp-hr (g/kWh)	
Dyno Cert (≥ 10001 lbs)	-	0.20 (0.2682)	0.01 (0.0134)	Gasoline: 14.4 (19.3104) Diesel: 15.5 (20.7855)	-



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Vehicle level tests as applicable:

Vehicles of LDV and MDV, regardless of the fuel type, are tested over the **FTP-75 test procedure** on Chassis dynamometer (the NMOG+NO_x limits must be additionally met over the **HFET cycle**).

Engine Tests as applicable:

Engine Dyno cert: Engines are hooked up to an engine dynamometer and follow an engine speed and engine torque map, normalized to a power map of the engine. require emission testing of gasoline as per **HD-FTP** and diesel as per **HD-FTP + ramped modal cycle (13 mode)**.



Emission limits for heavy vehicles EURO VI/B

Applicability

Apply to motor vehicles with a reference **mass exceeding 2,610 kg**, it applies **to all motor vehicles** including those with compression ignition engines, positive ignition engines as well as dual fuel engines.

Emission Limits

		Limit values							
		CO (mg/kWh)	THC (mg/kWh)	NMHC (mg/kWh)	CH4 (mg/kWh)	NOX (mg/kWh)	NH3 (ppm)	PM mass (mg/kWh)	PM number (#/kWh)
heavy-duty CI (diesel) engines: Steady-state testing	WHSC (CI)	1,500	130			400	10	10	8.0 x10 ¹¹
heavy-duty CI (diesel) and PI engines: Transient testing	WHTC (CI)	4,000	160			460	10	10	6.0 x 10 ¹¹
	WHTC (PI)	4,000		160	500	460	10	10	

- Tests shall be according UN/ECE Reg. 49.06:2013 or EU 582/2011.
- Engines are tested over the (WHSC + WHTC) test for diesel engines and WHTC test for positive ignition engines. In addition, the off-cycle (NTE+ PEMS) conformity testing is required.



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OBD threshold limits

	NOx	PM mass	CO
CI engines	1.5	0.025	-
PI engines	1.5	-	7.5



•UAE passengers Cars and Light Trucks starting from 2030 MY: (EURO 6D)

Testing for Emission

Spark ignition engines (petrol), including hybrids	<i>Diesel engines only, including hybrids</i>
<u>Emission at idle</u>	
<u>Crankcase emission</u>	
Durability assessment	
Gaseous pollutants + PM + PN	Gaseous pollutants + PM + PN
<u>WLTC homologation cycle</u>	<u>WLTC homologation cycle</u>
PN limit $6 \cdot 10^{11}$	PN limit $6 \cdot 10^{11}$
<u>Evaporate testing (2 days diurnal)</u>	
<u>In-service conformity (ISC) with added RDE procedure</u>	<u>In-service conformity (ISC) with added RDE procedure</u>
RDE Nox compliance factor 1.43	RDE Nox compliance factor 1.43



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Reference for Emission Testing.

- Manufacturer should comply with the following:
 - UN/ECE R 83.08: 2024
 - WLTP test requirements according to ECE R 154.
 - RDE test according to ECE R 168.
- As alternative the manufacturer can comply with EU 2018-1832

RDE conformity factors

NO _x CF	PN CF	CO
1.43 = 1 + margin, margin = 0.43	1.5 = 1 + margin PN, margin PN = 0.5	CO is to be measured and recorded



UAE Heavy Duty Vehicle Real Driving Emissions starting from 2030 MY EURO VI/D

OBD threshold limits

The OBD threshold limits (hereinafter OTLs) applicable to the OBD system are those specified in Table 1 for compression ignition engines and for positive ignition engines fitted to vehicles belonging to category M3, to N2 vehicles having a maximum permissible **mass exceeding 7.5 tons, and to N3** vehicles.

OBD threshold limits (OTLs)

Implementation	OTLs Limit in mg/kWh (Compression ignition engines)		OTLs Limit in mg/kWh positive ignition engines
	<i>NO_x</i>	<i>PM mass</i>	<i>NO_x</i>
All new HDV vehicles	1,200	25	1,200



The OCE/ISC testing emission

Real-World Emission (RWE) tests are required for the type approval of Heavy-Duty Vehicles (HDVs) using (PEMS testing).,

	PEMS power threshold	coolant temperature in PEMS	OCE , NTE g/kWh	PEMS CO, THC, NMHC, CH4, CF	PEMS NOx CF
(CI) (PI)	10%	70°C	NOx 0.60 THC 0.22 CO 2.0 PM 0.016	1.50	1.50



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Implementation Date:

- Starting from **1st January 2026** , new models. (first registration) light and heavy vehicles import to UAE shall comply with the new emission requirements which minimum equal to EURO 6B.
- Starting from **1st JULY 2027** , all light and heavy vehicles import in UAE shall comply with minimum EURO 6B emission standard or equivalent.
- New model refers to a vehicle that has been recently released or introduced by a manufacturer and not register worldwide before.



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Implementation stages for the Vehicle Emission requirements

		Existing Model			New Model		
		Complied Emission level			Complied Emission level		
		Euro 4	Euro 5	Euro 6	Euro 4	Euro 5	Euro 6
Model and time	2025 or before	A A	A A	A A			
	1.1.2026	A A	A A	A A	N N	N N	A A
	2027	A A	A A	A A			
	1.7.2027	N A	N A	A A			
	1.1.2028	N N	N N	A A			

Red color
registration

Green color
customs clearance

A Permitted

N Not Permitted



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Flowchart of Implementation Procedures

