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ANNEX I

Rules on data to be monitored and reported

PART A: DATA TO BE MONITORED AND REPORTED BY MEMBER STATES

- (a) vehicle identification numbers of all new heavy-duty vehicles as referred to in points (a) and (b) of the second paragraph of Article 2 that are registered in the Member State territory;
- (b) manufacturer name;
- (c) make (trade name of manufacturer);
- (d) the code for the bodywork as specified in entry 38 of the certificate of conformity, where available;
- (e) in the case of the heavy-duty vehicles referred to in point (a) of the second paragraph of Article 2, the information on the powerplant specified in entries 23, 23.1 and 26 of the certificate of conformity.

PART B: DATA TO BE MONITORED AND REPORTED BY MANUFACTURERS OF HEAVY-DUTY VEHICLES

1. Starting years for the monitoring and reporting of data for the heavy-duty vehicle categories set out in points (a) and (b) of the second paragraph of Article 2:

Category of heavy- duty vehicles	Vehicle group in vehicle category (as referred to in Annex I to Regulation (EU) 2017/2400)	Starting yearMonitoring	Starting yearReporting
N_1	_	_	_
N ₂	1 and 2	2020	2021
N ₃	3	2020	2021
	4, 5, 9 and 10	2019	2020
	11, 12 and 16	2020	2021
M_1	_	_	_
M_2	_	_	_
M ₃	_	_	_
O ₃	_	_	_
O ₄	_	_	_

2. Data to be monitored and reported:

Status: Point in time view as at 28/06/2018.

No	Monitoring parameters	Source Part I of Annex IV to Regulation (EU) 2017/2400, unless otherwise specified	Description
1	Vehicle identification number (VIN)	1.1.3	Vehicle and component
2	Engine certification number	1.2.2	identification
3	CdxA ^a certification number (if applicable)	1.8.3	
4	Transmission certification number	1.3.2	
5	Axle certification number	1.6.2	
6	Tyre certification number, axle 1	1.9.2	
7	Tyre certification number, axle 2	1.9.6	-
8	Tyre certification number, axle 3	1.9.10	
9	Tyre certification number, axle 4	1.9.14	
10	Vehicle category (N ₁ , N ₂ , N ₃ , M ₁ , M ₂ , M ₃)	1.1.4	Vehicle classification
11	Axle configuration	1.1.5	
12	Maximum gross vehicle weight (t)	1.1.6	
13	Vehicle group	1.1.7	

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- **b** Synchronised Manual Transmission.
- ${\bf c} \qquad \hbox{Automated Manual Transmission or Automatic Mechanically-engaged Transmission}.$
- d Automatic Powershifting Transmission.
- e 'Case S' means the serial arrangement of a torque converter and the connected mechanical parts of the transmission.
- **f** 'Case P' means the parallel arrangement of a torque converter and the connected mechanical parts of the transmission (e.g. in power split installations).
- g European Modular System (EMS) in accordance with Council Directive 96/53/EC of 25 July 1996 laying down for certain road vehicles circulating within the Community the maximum authorized dimensions in national and international traffic and the maximum authorized weights in international traffic (OJ L 235, 17.9.1996, p. 59).
- h World Harmonized Transient Driving Cycle.
- i Worldwide Harmonised Steady state Cycle.

Status: Point in time view as at 28/06/2018.

14	Name and address of manufacturer	1.1.1	Vehicle and chassis specification
15	Make (trade name of manufacturer)	1.1.7 Part II of Annex IV to Regulation (EU) 2017/2400	
16	Corrected actual curb mass (kg)	1.1.8	
17	Engine rated power (kW)	1.2.3	Main engine specifications
18	Engine idling speed (1/min)	1.2.4	
19	Engine rated speed (1/min)	1.2.5	
20	Engine capacity (ltr)	1.2.6	
21	Engine reference fuel type (diesel/LPG/CNG)	1.2.7	
22	Certification option used for generation of CdxA (standard values/measurement)	1.8.2	Aerodynamics
23	CdxA value (air drag value)	1.8.4	
24	Name and address of transmission manufacturer	_	Main transmission specifications
25	Make (trade name of transmission manufacturer)	_	
26	Certification option used for the generation of	1.3.3	

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	simulation tool loss maps (Option 1/ Option 2/Option 3/ Standard values)		
27	Transmission type (SMT ^b , AMT ^c , APT ^d -S ^c , APT-P ^f)	1.3.4	
28	Number of gears	1.3.5	
29	Transmission ratio final gear	1.3.6	
30	Retarder type	1.3.7	
31	Power take off (yes/no)	1.3.8	
32	Name and address of axle manufacturer	_	Main axle specifications
33	Make (trade name of axle manufacturer)	_	
34	Certification option used for the generation of a simulation tool loss map (standard values/ measurement)	1.7.3	
35	Axle type (e.g. standard single driven axle)	1.7.4	
36	Axle ratio	1.7.5	
37	Certification option used for the generation of a simulation tool loss	1.6.3	Angle drive specifications

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	map (standard values/measurement)		
38	Angle drive ratio	1.6.4	
39	Name and address of tyre manufacturer	_	Main tyre specifications
40	Make (trade name of tyre manufacturer)	_	
41	Tyre dimension axle	1.9.1	
42	Specific rolling resistance coefficient (RRC) of all tyres on axle 1	1.9.3	
43	Tyre dimension axle 2	1.9.4	
44	Twin axle (yes/no) axle 2	1.9.5	
45	Specific RRC of all tyres on axle 2	1.9.7	
46	Tyre dimension axle 3	1.9.8	
47	Twin axle (yes/no) axle 3	1.9.9	
48	Specific RRC of all tyres on axle 3	1.9.11	
49	Tyre dimension axle	1.9.12	
50	Twin axle (yes/no) axle 4	1.9.13	
51	Specific RRC of all tyres on axle 4	1.9.15	

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52	Engine cooling fan technology	1.10.1	Main auxiliary specifications
53	Steering pump technology	1.10.2	
54	Electric system technology	1.10.3	
55	Pneumatic system technology	1.10.4	
56	Mission profile (long haul, long haul (EMS ^g), regional, regional (EMS), urban, municipal, construction)	2.1.1	Simulation parameters (for each mission profile/load/ fuel combination)
57	Load (as defined in the simulation tool) (kg)	2.1.2	
58	Fuel type (diesel/petrol/LPG/CNG/)	2.1.3	
59	Total vehicle mass in simulation (kg)	2.1.4	
60	Average speed (km/h)	2.2.1	Vehicle driving
61	Minimum instantaneous speed (km/h)	2.2.2	performance (for each mission profile/load/fuel combination)
62	Maximum instantaneous speed (km/h)	2.2.3	
63	Maximum deceleration (m/s ²)	2.2.4	

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64	Maximum acceleration (m/s ²)	2.2.5	
65	Full load percentage on driving time	2.2.6	
66	Total number of gear shifts	2.2.7	
67	Total driven distance (km)	2.2.8	
68	CO ₂ emissions (expressed in g/km, g/t-km, g/p-km, g/m ³ - km)	2.3.13-2.3.16	CO ₂ emissions and fuel consumption (for each mission profile/load/fuel combination)
69	Fuel consumption (expressed in g/km, g/t-km, g/p-km, g/m³- km, l/100km, l/t-km, l/p-km, l/m³-km, MJ/ km, MJ/t-km, MJ/p- km, MJ/m³-km)	2.3.1-2.3.12	Combination)
70	Simulation tool version (X.X.X.)	3.1.1	Software and user information
71	Date and time of the simulation	3.1.2	
72	Number of licence to operate the simulation tool	_	
73	Cryptographic hash of simulation tool result	3.1.4	
74	Advanced CO ₂ reducing technologies	_	Vehicle CO ₂ reducing technologies

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75	CO ₂ mass emission of the engine over WHTC ^h (g/kWh)	Point 1.4.2 of the addendum to Appendix 5, or point 1.4.2 of the addendum to Appendix 7, to Annex I to Regulation (EU) No 582/2011, whichever is applicable	Engine CO ₂ emission and specific fuel consumption
76	Fuel consumption of the engine over WHTC (g/kWh)	Point 1.4.2 of the addendum to Appendix 5, or point 1.4.2 of the addendum to Appendix 7, to Annex I to Regulation (EU) No 582/2011, whichever is applicable	
77	CO ₂ mass emission of the engine over WHSC ⁱ (g/kWh)	Point 1.4.1 of the addendum to Appendix 5, or point 1.4.1 of the addendum to Appendix 7, to Annex I to Regulation (EU) No 582/2011, whichever is applicable	
78	Fuel consumption of the engine over WHSC (g/kWh)	Point 1.4.1 of the addendum to Appendix 5, or point 1.4.1 of the addendum to Appendix 7, to Annex I to	

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			Regulation (EU) No 582/2011, whichever is applicable	
a	Air drag.			
b	Synchronised Manual Tra	insmission.		
c	Automated Manual Trans	mission or Automatic Mechanic	ally-engaged Transmission.	
d	Automatic Powershifting	Transmission.		
e	'Case S' means the serial arrangement of a torque converter and the connected mechanical parts of the transmission.			
f	'Case P' means the parallel arrangement of a torque converter and the connected mechanical parts of the transmission (e.g. in power split installations).			
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PART C: AIR DRAG VALUE (CDXA) RANGES FOR THE PURPOSE OF PUBLICATION IN ACCORDANCE WITH ARTICLE 6

For the purpose of making publicly available the CdxA value specified in data entry 23 in accordance with Article 6, the Commission shall use the ranges defined in the following table containing the corresponding range for each CdxA value:

Range	CdxA value [m ²]		
	$\begin{array}{c} \text{Min CdxA (CdxA} \geq \text{min} \\ \text{CdxA)} \end{array}$	Max CdxA (CdxA < MaxCdxA)	
A1	0,0	3,0	
A2	3,0	3,15	
A3	3,15	3,31	
A4	3,31	3,48	
A5	3,48	3,65	
A6	3,65	3,83	
A7	3,83	4,02	
A8	4,02	4,22	
A9	4,22	4,43	
A10	4,43	4,65	
A11	4,65	4,88	
A12	4,88	5,12	
A13	5,12	5,38	
A14	5,38	5,65	
A15	5,65	5,93	

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A16	5,93	6,23
A17	6,23	6,54
A18	6,54	6,87
A19	6,87	7,21
A20	7,21	7,57
A21	7,57	7,95
A22	7,95	8,35
A23	8,35	8,77
A24	8,77	9,21

ANNEX II

Data reporting and management

- 1. REPORTING BY MEMBER STATES
- 1.1. The data specified in Part A of Annex I shall be transmitted in accordance with Article 4 by the contact point of the competent authority via electronic data transfer to the Central Data Repository managed by the European Environment Agency ('the Agency').

The contact point shall notify the Commission and the Agency when the data are transmitted by email to the following addresses:

EC-CO2-HDV-IMPLEMENTATION@ec.europa.eu

and

HDV-monitoring@eea.europa.eu

- 2. REPORTING BY MANUFACTURERS
- 2.1. Manufacturers shall notify the Commission without delay and not later than by 31 December 2018 of the following information:
- (a) the manufacturer name indicated in the certificate of conformity or individual approval certificate;
- (b) the World Manufacturer Identifier code (WMI code) as defined in Commission Regulation (EU) No 19/2011⁽¹⁾ to be used in the vehicle identification numbers of new heavy-duty vehicles to be placed on the market;
- (c) the contact point responsible for uploading the data to the Business Data Repository of the Agency.

They shall notify the Commission without delay of any changes to that information.

The notifications shall be sent to the addresses referred to in point 1.1.

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- 2.2. New manufacturers entering the market shall inform the Commission without delay of the information referred to in point 2.1.
- 2.3. The data specified in point 2 of Part B of Annex I shall be transmitted in accordance with Article 5(1) by the contact point of the manufacturer via electronic data transfer to the Business Data Repository managed by the Agency.

The contact point shall notify the Commission and the Agency when the data are transmitted by email to the addresses referred to in point 1.1.

3. DATA PROCESSING

- 3.1. The Agency shall process the data transmitted in accordance with points 1.1 and 2.3 and shall record the processed data in the Register.
- 3.2. The data relating to heavy-duty vehicles registered in the preceding calendar year and recorded in the Register shall be made public by 31 October each year, starting from 2020, with the exception of the data entries specified in Article 6(1).
- 3.3. Where a competent authority or manufacturers identify errors in the data submitted, they shall without delay notify those to the Commission and the Agency by submitting an error notification report to the Central Data Repository or the Business Data Repository and by email sent to the addresses referred to in point 1.1.
- 3.4. The Commission shall with the support of the Agency verify the notified errors and, where appropriate, correct the data in the Register.
- 3.5. The Commission, with the support of the Agency, shall make available electronic formats for the data transmissions referred to in points 1.1 and 2.3 in due time before the transmission deadlines.

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(1) Commission Regulation (EU) No 19/2011 of 11 January 2011 concerning type-approval requirements for the manufacturer's statutory plate and for the vehicle identification number of motor vehicles and their trailers and implementing Regulation (EC) No 661/2009 of the European Parliament and of the Council concerning type-approval requirements for the general safety of motor vehicles, their trailers and systems, components and separate technical units intended therefor (OJ L 8, 12.1.2011, p. 1).

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