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## ANNEX I

### Rules on data to be monitored and reported

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

- 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 <sub>1</sub>	—	—	—
N <sub>2</sub>	1 and 2	2020	2021
N <sub>3</sub>	3	2020	2021
	4, 5, 9 and 10	2019	2020
	11, 12 and 16	2020	2021
M <sub>1</sub>	—	—	—
M <sub>2</sub>	—	—	—
M <sub>3</sub>	—	—	—
O <sub>3</sub>	—	—	—
O <sub>4</sub>	—	—	—

- Data to be monitored and reported:

No	Monitoring parameters	Source Part I of Annex IV to	Description
a	Air drag.		
b	Synchronised Manual Transmission.		
c	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.		
j	[ <sup>F1</sup> Data entries 85, 86, 87, 90, 93, 95 and 96 shall not be made publicly available in the Central Register on heavy-duty vehicles.]		

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		<b>Regulation (EU) 2017/2400, unless otherwise specified</b>	
1	Vehicle identification number (VIN)	1.1.3	Vehicle and component identification
2	Engine certification number	1.2.2	
3	CdxA <sup>a</sup> certification number (if applicable)	1.8.3	
4	Transmission certification number	1.3.2	
[ <sup>F25</sup>	Axle certification number	1.7.2	Axle specifications]
6	Tyre certification number, axle 1	1.9.2	Vehicle and component identification
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 <sub>1</sub> , N <sub>2</sub> , N <sub>3</sub> , M <sub>1</sub> , M <sub>2</sub> , M <sub>3</sub> )	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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14	Name and address of manufacturer	1.1.1	Vehicle and chassis specification
[ <sup>F2</sup> 15	Make (trade name of manufacturer)	—	Vehicle specifications]
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	
[ <sup>F2</sup> 21	Fuel type (Diesel CI/ CNG PI/LNG PI ...)	1.2.7	Engine specifications]
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 <sup>b</sup> , AMT <sup>c</sup> , APT <sup>d</sup> -S <sup>e</sup> , APT-P <sup>f</sup> )	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	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 4	1.9.12	
50	Twin axle (yes/no) axle 4	1.9.13	

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51	Specific RRC of all tyres on axle 4	1.9.15	
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 <sup>a</sup> ), 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 performance (for each mission profile/load/fuel combination)
61	Minimum instantaneous speed (km/h)	2.2.2	
62	Maximum instantaneous speed (km/h)	2.2.3	

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63	Maximum deceleration (m/s <sup>2</sup> )	2.2.4	
64	Maximum acceleration (m/s <sup>2</sup> )	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 <sub>2</sub> emissions (expressed in g/km, g/t-km, g/p-km, g/m <sup>3</sup> -km)	2.3.13-2.3.16	CO <sub>2</sub> 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/m <sup>3</sup> -km, l/100km, l/t-km, l/p-km, l/m <sup>3</sup> -km, MJ/km, MJ/t-km, MJ/p-km, MJ/m <sup>3</sup> -km)	2.3.1-2.3.12	
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	—	

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[ <sup>F2</sup> 73	Cryptographic hash of the manufacturer's records file	3.1.4	Software information]
74	Advanced CO <sub>2</sub> reducing technologies	—	Vehicle CO <sub>2</sub> reducing technologies
75	CO <sub>2</sub> mass emission of the engine over WHTC <sup>h</sup> (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 <sub>2</sub> 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 <sub>2</sub> mass emission of the engine over WHSC <sup>i</sup> (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	

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		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 Regulation (EU) No 582/2011, whichever is applicable	
[ <sup>F1</sup> 79	Vehicle model	1.1.2	Vehicle specifications
80	Vocational vehicle (yes/no)	1.1.9	
81	Zero emission heavy-duty vehicle (yes/no)	1.1.10	
82	Hybrid electric heavy-duty vehicle (yes/no)	1.1.11	
83	Dual-fuel vehicle (yes/no)	1.1.12	
84	Sleeper cab (yes/no)	1.11.13	
85	Engine model <sup>i</sup>	1.2.1	Engine specifications
86	Transmission model <sup>j</sup>	1.3.1	Transmission specifications
87	Retarder model <sup>j</sup>	1.4.1	Retarder specifications
88	Retarder certification number	1.4.2	

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89	Certification option used for generation of a loss map (standard values/measurement)	1.4.3	
90	Torque converter model <sup>i</sup>	1.5.1	Torque converter specifications
91	Torque converter certification number	1.5.2	
92	Certification option used for generation of a loss map (standard values/measurement)	1.5.3	
93	Angle drive model <sup>i</sup>	1.6.1	Angle drive specifications
94	Angle drive certification number	1.6.2	
95	Axle model <sup>i</sup>	1.7.1	Axle specifications
96	Air drag model <sup>i</sup>	1.8.1	Aerodynamics
97	Engine stop-start during vehicle stops (yes/no)	1.12.1	Advanced driver assistance systems (ADAS)
98	Eco-roll without engine stop-start (yes/no)	1.12.2	
99	Eco-roll with engine stop-start (yes/no)	1.12.3	
100	Predictive cruise control (yes/no)	1.12.4]	

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### Textual Amendments

- F1** Inserted by Commission Delegated Regulation (EU) 2019/888 of 13 March 2019 amending Annex I to Regulation (EU) 2018/956 of the European Parliament and of the Council as regards the data on new heavy-duty vehicles to be monitored and reported by Member States and by manufacturers (Text with EEA relevance).
- F2** Substituted by Commission Delegated Regulation (EU) 2019/888 of 13 March 2019 amending Annex I to Regulation (EU) 2018/956 of the European Parliament and of the Council as regards the data on new heavy-duty vehicles to be monitored and reported by Member States and by manufacturers (Text with EEA relevance).

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