#### ANNEX VI

### Pollutant emission limit values, OBD thresholds and soundlevel limit values for type-approval and conformity of production (A)Tailpipe emission limits after cold start

## (A1)

### EURO 4

| Vehicle<br>category                           | Vehicle<br>category<br>name | Propulsi<br>class   | o <b>E</b> uro<br>level | Mass<br>of<br>carbon<br>monoxid | Mass<br>of<br>total<br>le <b>((§D)</b> oc | Mass<br>of<br>oxides<br>arbofns(TH<br>nitrogei |                               |                  |
|---|-----------------------------|---|-------------------------|---------------------------------|---|--|-------------------------------|------------------|
|   |                             |   |                         | L <sub>1</sub><br>(mg/<br>km)   | L <sub>2</sub><br>(mg/<br>km)             | L <sub>3</sub><br>(mg/<br>km)                  | L <sub>4</sub><br>(mg/<br>km) |                  |
| L1e-A   | Powered cycle               | PI/CI/<br>Hybrid  | Euro 4                  | 560                             | 100                                       | 70   |                               | ECE<br>R47       |
| L1e-B   | Two-<br>wheel<br>moped      | PI/CI/<br>Hybrid  | Euro 4                  | 1 000                           | 630                                       | 170  |                               | ECE<br>R47       |
| L2e   | Three-<br>wheel<br>moped    | PI/CI/<br>Hybrid  | Euro 4                  | 1 900                           | 730                                       | 170  |                               | ECE<br>R47       |
| L3e<br>L4e ( <sup>7</sup> )<br>L5e-A<br>L7e-A |                             | IRVAPI<br>wHigebtid,<br>nv <sub>OtO</sub> rsyclo<br>wli310 km/<br>ahd | Euro 4<br>es            | 1 140                           | 380                                       | 70   | _                             | WMTC,<br>stage 2 |
|   |                             | without<br>stde-<br>taybrid,<br>Hybrid,<br>TYrevete<br>Heavym/<br>on- | Euro 4                  | 1 140                           | 170                                       | 90   | _                             | WMTC,<br>stage 2 |
|   |                             | readCI<br>9H3dbrid  | Euro 4                  | 1 000                           | 100                                       | 300  | 80 (8)                        | WMTC,<br>stage 2 |
| L5e-B   | Commerc<br>tricycle         | i <b>₽I</b> /PI<br>Hybrid   | Euro 4                  | 2 000                           | 550                                       | 250  |                               | ECE<br>R40       |
|   |                             | CI/CI<br>Hybrid   | Euro 4                  | 1 000                           | 100                                       | 550  | 80 (8)                        | ECE<br>R40       |
| L6e-A<br>L6e-B                                | Light<br>on-road            | PI/PI<br>Hybrid   | Euro 4                  | 1 900                           | 730                                       | 170  |                               | ECE<br>R47       |
|   | quad<br>Light<br>quadrimo   | CI/CI<br>Hybrid<br>bile   | Euro 4                  | 1 000                           | 100                                       | 550  | 80 ( <sup>8</sup> )           | ECE<br>R47       |

| L7e-B Heavy<br>L7e-C all | PI/PI<br>Hybrid                      | Euro 4                  | 2 000  | 550   | 250 |     | ECE<br>R40          |            |
|--------------------------|--------------------------------------|-------------------------|--------|-------|-----|-----|---------------------|------------|
|                          | terrain<br>quad<br>Heavy<br>quadrimo | CI/CI<br>Hybrid<br>bile | Euro 4 | 1 000 | 100 | 550 | 80 ( <sup>8</sup> ) | ECE<br>R40 |

# (A2)

# EURO 5

| Vehicle<br>categor | Vehicle<br>y categor<br>name | Propul:<br>y class | sid <b>a</b> uro<br>Level ( <sup>4</sup> | carbon                        | Mass<br>of<br>total<br>d <b>b((GO</b> )c | Mass<br>of<br>Non-<br>ar <b>hets</b> (il<br>hydrod | Mass<br>of<br>oxides<br>fi <b>El6f</b> )<br>can <b>biónsgð</b> | Mass<br>of<br>particu<br>matter(<br><b>A(THO</b> <sub>x</sub> ) |                                   |
|--------------------|------------------------------|--------------------|--|-------------------------------|--|--|--|---|-----------------------------------|
|                    |                              |                    |  | L <sub>1</sub><br>(mg/<br>km) | L <sub>2A</sub><br>(mg/<br>km)           | L <sub>2B</sub><br>(mg/<br>km)                     | L <sub>3</sub><br>(mg/<br>km)                                  | L <sub>4</sub><br>(mg/<br>km)                                   |                                   |
| L1e-A              | Powered cycle                | PI/CI/<br>Hybrid   | Euro 5                                   | 500                           | 100                                      | 68   | 60   | 4,5 ( <sup>9</sup> )  | Revised<br>WMTC ( <sup>10</sup> ) |
| L1e-B-<br>L7e      | All<br>other                 | PI/ PI<br>Hybrid   | Euro 5                                   | 1 000                         | 100                                      | 68   | 60   | 4,5 ( <sup>9</sup> )  | Revised<br>WMTC                   |
|                    | L-<br>category<br>vehicles   | CI/CI<br>Hybrid    |  | 500                           | 100                                      | 68   | 90   | 4,5   | Revised<br>WMTC                   |

(B) On-board diagnostics emission thresholds

(B1)

EURO 4, OBD STAGE I

| Vehicle<br>category  | Vehicle<br>category<br>name | Propulsio<br>class                                      | n Euro<br>level | Mass of<br>carbon<br>monoxid   | Mass<br>of total<br>e(GQIrocal | Mass of<br>oxides<br>rboofs(THC) | Test<br>cycle      |
|--|-----------------------------|---|-----------------|--------------------------------|--------------------------------|----------------------------------|--------------------|
|  |                             |   |                 |                                |                                | nitrogen(                        | (NO <sub>x</sub> ) |
|  |                             |   |                 | OT <sub>1</sub><br>(mg/<br>km) | OT <sub>2</sub><br>(mg/<br>km) | OT <sub>3</sub><br>(mg/<br>km)   |                    |
| L6e-A  | r<br>l                      | PI, CI or<br>hybrid<br>oad<br>ight<br>juad              | Euro 4          | 3 610                          | 2 690                          | 850                              | ECE R47            |
| L3e ( <sup>5</sup> )<br>L4e ( <sup>7</sup> )<br>L5e-A<br>L7e-A | r v                         | Wd/PI<br>vlł <b>e</b> gbrid<br>notorcycle<br>vitb0 km/h | Euro 4          | 2 170                          | 1 400                          | 350                              | WMTC,<br>stage 2   |

|   | and $I/PI$<br>with subtid<br>side $\frac{1}{max} \ge$<br>cal 30 km/h | 2 170 | 630 | 450 | WMTC,<br>stage 2 |
|---|--|-------|-----|-----|------------------|
| _ | Tricycle<br>Heal/CI<br>onHybrid<br>road<br>quad                      | 2 170 | 630 | 900 | WMTC,<br>stage 2 |

## (B2)

# EURO 5, OBD STAGE I AND OBD STAGE II (<sup>4</sup>)

| Vehicle<br>category          | Vehicle<br>category<br>name                      | Propulsi<br>class | oÆuro<br>level | Mass<br>of<br>carbon<br>monoxic | Mass<br>of<br>Non-<br>le <b>(630)</b> and<br>hydroca | Mass<br>of<br>oxides<br>of<br>r <b>huins(g</b> &M | Mass<br>of<br>particul<br>matter(l |                 |
|------------------------------|--|-------------------|----------------|---------------------------------|--|---|------------------------------------|-----------------|
|                              |  |                   |                | OT <sub>1</sub><br>(mg/<br>km)  | OT <sub>2</sub><br>(mg/<br>km)                       | OT <sub>3</sub><br>(mg/<br>km)                    | OT <sub>4</sub><br>(mg/<br>km)     |                 |
| L3e-<br>L7e ( <sup>6</sup> ) | All L<br>category                                | PI/PI<br>Hybrid   | Euro 5         | 1 900                           | 250  | 300   | 50                                 | Revised<br>WMTC |
|                              | vehicles<br>except<br>category<br>L1e and<br>L2e | CI/CI<br>Hybrid   | Euro 5         | 1 900                           | 320  | 540   | 50                                 | Revised<br>WMTC |

(C) Evaporative emission limits

## (C1)

## EURO 4

| Vehicle<br>category         | Vehicle<br>category<br>name   | Propulsion<br>class  | Euro level | Mass<br>of total<br>hydrocarbon<br>(THC)(mg/<br>test) | Test cycle<br>s |
|-----------------------------|---|----------------------|------------|---|-----------------|
| L3e<br>L4e ( <sup>7</sup> ) | Two-wheel<br>motorcycle ( <sup>13</sup> )<br>with and<br>without side-<br>car | PI ( <sup>11</sup> ) | Euro 4     | 2 000   | SHED            |
| L5e-A                       | Tricycle  | PI ( <sup>11</sup> ) | Euro 4     |   |                 |
| L6e-A                       | Light on-road<br>quad   | PI ( <sup>11</sup> ) | Euro 4     |   |                 |

| L7e-A | Heavy on-<br>road quad | PI ( <sup>11</sup> ) | Euro 4 |  |  |
|-------|------------------------|----------------------|--------|--|--|
|-------|------------------------|----------------------|--------|--|--|

| ( | C2 | ) |
|---|----|---|
|   |    |   |

| EURO : | 5 |
|--------|---|
|--------|---|

| Vehicle<br>Class ( <sup>12</sup> ) | Vehicle<br>category<br>name                                | Propulsion<br>Class  | Euro<br>level | Permeation<br>m <sup>2/</sup> day) | Permeation test(mg/<br>m <sup>2/</sup> day) |                  |
|------------------------------------|--|----------------------|---------------|------------------------------------|---|------------------|
|                                    |  |                      |               | Fuel tank                          | Fuel<br>tubing                              | test)<br>Vehicle |
| L1e-A                              | Powered cycle  | PI ( <sup>11</sup> ) | Euro 5        | 1 500                              | 15 000                                      | 1 500            |
| L1e-B                              | Two-wheel moped  |                      | Euro 5        | 1 500                              | 15 000                                      | 1 500            |
| L2e                                | Three-<br>wheel<br>moped                                   |                      | Euro 5        | 1 500                              | 15 000                                      | 1 500            |
| L3e<br>L4e ( <sup>7</sup> )        | Two-wheel<br>motorcycle<br>with and<br>without<br>side-car |                      | Euro 5        |                                    |   | 1 500            |
| L5e-A                              | Tricycle   | -                    | Euro 5        |                                    |   | 1 500            |
| L5e-B                              | Commercial tricycle  |                      | Euro 5        | 1 500                              | 15 000                                      | 1 500            |
| L6e-A                              | Light on-<br>road quad                                     | -                    | Euro 5        |                                    |   | 1 500            |
| L6e-B                              | Light<br>quadri-<br>mobile                                 | -                    | Euro 5        | 1 500                              | 15 000                                      | 1 500            |
| L7e-A                              | Heavy on-<br>road quad                                     | -                    | Euro 5        |                                    |   | 1 500            |
| L7eB                               | All terrain quad   |                      | Euro 5        | 1 500                              | 15 000                                      | 1 500            |
| L7e-C                              | Heavy<br>quadri-<br>mobile                                 |                      | Euro 5        | 1 500                              | 15 000                                      | 1 500            |

(D) Sound-level limits — Euro 4 and Euro 5

| Vehicle<br>category | Vehicle<br>category<br>name   | Euro 4<br>sound<br>level ( <sup>14</sup> )<br>(dB(A)) | Euro 4 test<br>procedure ( <sup>16</sup> )    | Euro 5<br>5 sound<br>level ( <sup>15</sup> )<br>(dB(A)) | Euro 5 test<br>procedure     |
|---------------------|---|---|---|---|------------------------------|
| L1e-A               | Powered cycle   | 63 ( <sup>14</sup> )                                  | Delegated<br>act/UNECE                        |   | UNECE<br>regulation No       |
| L1e-B               | Two-wheel<br>moped $v_{max} \le 25 \text{ km/h}$  | 66  | regulation No<br>63                           |   | 63                           |
|                     | Two-wheel<br>moped $v_{max} \le 45 \text{ km/h}$  | 71  |   |   |                              |
| L2e                 | Three-wheel<br>moped  | 76  | Delegated<br>act/UNECE<br>regulation No<br>9  |   | UNECE<br>regulation No<br>9  |
| L3e                 | Two-wheel<br>motorcycle<br>Engine<br>capacity $\leq$<br>$80 \text{ cm}^3$                         | 75  | Delegated<br>act/UNECE<br>regulation No<br>41 |   | UNECE<br>regulation No<br>41 |
|                     | Two-wheel<br>motorcycle<br>$80 \text{ cm}^3 <$<br>Engine<br>capacity $\leq$<br>$175 \text{ cm}^3$ | 77  |   |   |                              |
|                     | Two-wheel<br>motorcycle<br>Engine<br>capacity ><br>$175 \text{ cm}^3$                             | 80  |   |   |                              |
| L4e                 | Two-wheel<br>motorcycle<br>with side-car  | 80  |   |   |                              |
| L5e-A               | Tricycle  | 80  | Delegated                                     |   | UNECE                        |
| L5e-B               | Commercial tricycle   | 80  | act/UNECE<br>regulation No<br>9               |   | regulation No<br>9           |
| L6e-A               | Light on-road<br>quad   | 80  | Delegated<br>act/UNECE<br>regulation No<br>63 |   | UNECE<br>regulation No<br>63 |
| L6e-B               | Light<br>quadrimobile   | 80  | Delegated<br>act/UNECE                        |   | UNECE<br>regulation No<br>9  |

| L7e-A | Heavy on-<br>road quad    | 80 | regulation No<br>9 |  |
|-------|---------------------------|----|--------------------|--|
| L7e-B | Heavy all<br>terrain quad | 80 |                    |  |
| L7e-C | Heavy<br>quadrimobile     | 80 |                    |  |

NB: refer to the end of Annex VIII for an overview of the notes to the annexes.