Transposition of EURO VI requirements into UN/ECE R49

GRPE January 2012

Submitted by the expert of the European Commission

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Background

- Informal document to GRPE January 2011 (GRPE-61-18)
- Need to update Regulation 49 for « Euro VI requirements »
- Agreed by GRPE in its 61st session
- Invitation to participate in working group sent to GRPE send list in spring 2011
- European Commission contracted TRL/Ecorys to support the Commission in the work
- A first draft text was submitted to 62nd GRPE as an informal document (GRPE-62-10 and 11)
- At 62nd GRPE EC asked for comments on the proposal
- Written comments on the scope were received from JAMA
- Formal proposal presented to 63rd GRPE January 2012
Current Euro V (05 series of amendments)

• Reg 49-05 includes up to Euro V requirements (Stage B2)
• Reg 49-05 also include annexes not applicable at the moment
  ➢ Annex 4B (WHDC-gtr)
  ➢ Annex 4C (PN measurement procedure)
  ➢ Annex 9B (OBD-gtr)
  ➢ Annex 9C (IUPR)
  ➢ Annex 10 (OCE-gtr)
Proposal

• Objective is to make a new consolidated series of amendments only covering « Euro VI requirements »

• Include requirements from EC regulation No 595/2009 (Euro VI) and corresponding implementing regulations

• Include the currently not applicable Annexes (4B,4C,9B,9C and 10) and make them applicable
Updating Regulation 49-06 series of amendments

Regulation 49 currently replicates 2005/55/EC as implemented by 2005/78/EC

Directive 2007/46/EC
Reg (EC) No 595/2009

Implementing Reg (EU) No 582/2011 Including 2\textsuperscript{nd} Comitology

Regulation 49
06 Series of Amendments
Euro VI specific for 63\textsuperscript{rd} GRPE January 2012

Process informed by equivalent update to Reg. 83 (Light-Duty Vehicles)

EC Specific elements removed

Parallel Activities e.g.
Annex 9B and 9C Update March 2011
GTR No.5 Update

Regulation 49 - 05 Series of Amendments Revision 5 – May 2011

Regulation 49 – Annex 4C
Particle Number Measurement Test Procedure

Updating Regulation 49-06 series of amendments

Implementing Reg (EU) No 582/2011 Including 2\textsuperscript{nd} Comitology
# Structure of R49-06 series of amendments

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Scope

• Regulation No. 49
   “… ”compression-ignition engines for use in vehicles, and the emission of gaseous pollutants from positive-ignition engines fuelled with natural gas or liquefied petroleum gas for use in vehicles”

• Euro VI Reg (EC) No 595/2009
   … ”on type-approval of motor vehicles and engines with respect to emissions from heavy duty vehicles (Euro VI)”
   Euro VI covers all C.I. and all P.I. engines (petrol and E85)

• R49-06 only covers “Euro VI” approvals
Transitional provisions

• Euro VI includes “phase-in” requirements on OBD-monitoring and NOx-control
• Proposal for R49-06 is to align with Euro VI and include stages as for Euro VI (see table on next slide)
# Phase-in requirements

<table>
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<tr>
<th>Character</th>
<th>NO\textsubscript{x} OTL\textsuperscript{(1)}</th>
<th>PM OTL\textsuperscript{(2)}</th>
<th>Reagent quality, consumption</th>
<th>IUPR</th>
<th>Implementation dates: new types</th>
<th>Implementation dates: all vehicles</th>
<th>Last date of registration</th>
</tr>
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**Key:**

(1) 'NO\textsubscript{x} OTL' monitoring requirements as set out in table 1 and 2 of Annex X.
(2) ‘PM OTL’ monitoring requirements as set out in table 1 of Annex X.
(3) ‘Performance monitoring’ requirements as set out in point 2.3.3.3. of Annex X.
(4) Reagent quality and consumption ‘phase-in’ requirements as set out in points 7.1.1.1 and 8.4.1.1. of Annex XIII.
(5) Reagent quality and consumption ‘general’ requirements as set out in points 7.1.1. and 8.4.1. of Annex XIII.
Important remarks

• Scope of R49-06 (including P.I. petrol/E85 engines)
  ➢ Proposal is to align with “EC Euro VI” and include all C.I. and P.I. engines
  ➢ JAMA raised concerns on including P.I. engines
• Euro VI “phase in requirements”. mainly on OBD and NOx control monitoring have been included
• In-service conformity (PEMS) and technical In-use performance ratio (IUPR) requirements have been aligned with “EC Euro VI”
• IUPR phase-in requirements from EC Euro VI have been excluded
• EC Euro VI requirements on access to vehicle repair and maintenance information have been excluded
• Access to OBD has been aligned to R83 requirements
Type-approval modes

• Aligning with “EC-Euro VI” with 3 type-approval modes
  ➢ Approval of an engine system as a separate technical unit
  ➢ Approval of a vehicle with an approved engine
  ➢ Approval of a vehicle type with respect to emissions
**Approval Marking**

**Number of country (1) granting the approval**

**Letter (s) denoting the engine type (2)**

**Stage of requirements (3)**

**Number of Regulation (Regulation No. 49)**

**Approval number**

**Engine type codes for approval marks**

<table>
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<th>Engine type</th>
<th>Code</th>
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<tr>
<td>Diesel fuelled CI engine</td>
<td>D</td>
</tr>
<tr>
<td>Ethanol (ED95) fuelled CI engine</td>
<td>ED</td>
</tr>
<tr>
<td>Ethanol (E85) fuelled PI engine</td>
<td>E85</td>
</tr>
<tr>
<td>Petrol fuelled PI engine</td>
<td>P</td>
</tr>
<tr>
<td>LPG fuelled PI engine</td>
<td>Q</td>
</tr>
<tr>
<td>Natural gas fuelled PI engine</td>
<td>See paragraph 4.12.3.3.6. of this Regulation</td>
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Timeline

• 61st GRPE January 2011 (GRPE-61-18)
• 62nd GRPE June 2011 1st draft of Reg 49-06 (GRPE-62-10 and 11)
• 63rd GRPE January 2012 final proposal as formal document
• If adopted by GRPE submitted to WP29 for adoption