

Transposition of EURO VI requirements into UN/ECE R49

GRPE January 2012

Submitted by the expert of the
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Enterprise and Industry

Bernardo MARTÍNEZ
Automotive Industry Unit
bernardo.martinez@ec.europa.eu

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

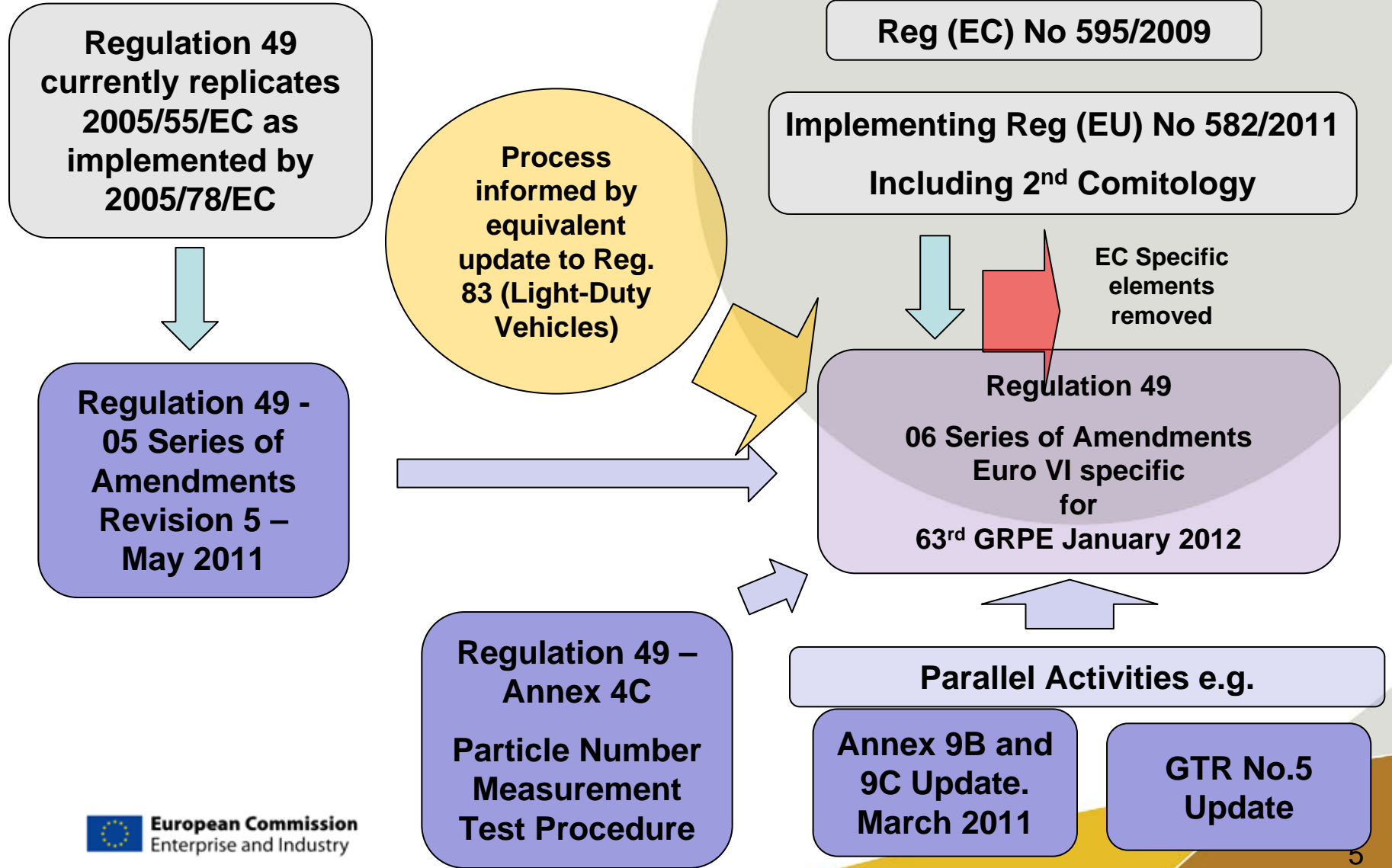
Current Euro V (05 series of amendments)

- 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



Structure of R49-06 series of amendments

Main body of Regulation	Scope, definitions, application for approval, conformity of production, transitional provisions etc.
Annex 1	Models of information document
Annex 2A , 2B and 2C	Communications concerning the approvals
Annex 3	Arrangements of approval marks
Annex 4	Test procedure (incorporates WHDC (gtr) No. 4)
Annex 5	Specification of reference fuels
Annex 6	Emissions data required at type-approval for roadworthiness purposes
Annex 7	Verifying the durability of engine systems
Annex 8	Conformity of in-service vehicles/engines
Annex 9A, B and C	On-board diagnostic systems (OBD) (OBD gtr No.5 in Annex 9B)
Annex 10	Requirements to limit off-cycle emissions (OCE) and in-use emissions (incorporates OCE gtr No.10)
Annex 11	Requirements to ensure the correct operation of NO _x control measures
Annex 12	CO ₂ emissions and fuel consumption
Annex 13	Type-approval of replacement pollution control devices as separate technical unit
Annex 14	Access to OBD Information

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

Character	NO _x OTL ⁽¹⁾	PM OTL ⁽²⁾	Reagent quality, consumption	IUPR	Implementation dates: new types	Implementation dates: all vehicles	Last date of registration
A	Row "phase-in period" of tables 1 and 2	Performance Monitoring ⁽³⁾	Phase in ⁽⁴⁾	Exempted	31.12.2012	31.12.2013	1.9.2015
B	Row "phase-in period" of tables 1 and 2	Row "phase-in period" of table 1	Phase in ⁽⁴⁾	Exempted	1.9.2014	1.9.2015	31.12.2016
C	Row "general requirements" of tables 1 and 2	Row "general requirements" of table 1	General ⁽⁵⁾	Annex 9A	31.12.2015	31.12.2016	

Key:

- (1) 'NO_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.

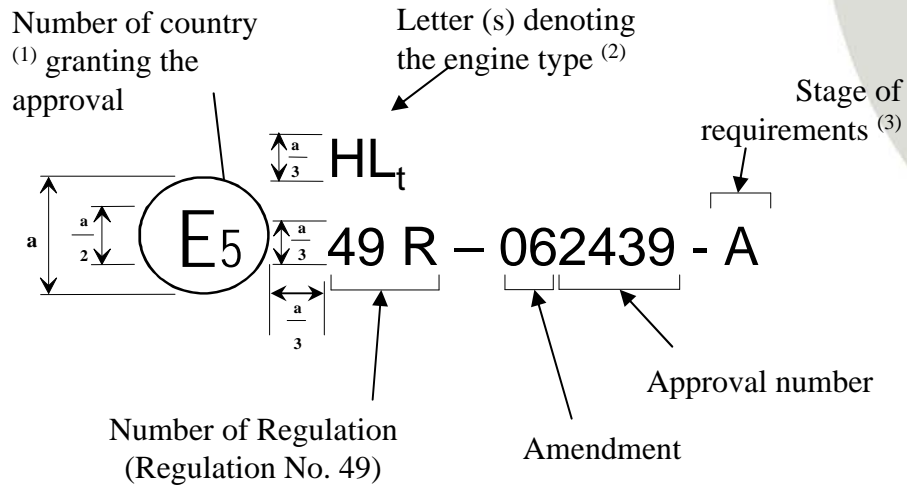
Important remarks

- 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



Engine type codes for approval marks

Engine type	Code
Diesel fuelled CI engine	D
Ethanol (ED95) fuelled CI engine	ED
Ethanol (E85) fuelled PI engine	E85
Petrol fuelled PI engine	P
LPG fuelled PI engine	Q
Natural gas fuelled PI engine	See paragraph 4.12.3.3.6. of this Regulation

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

Contact information

Bernardo Martinez, European Commission

bernardo.martinez@ec.europa.eu

Robert Gardner, TRL

rgardner@trl.co.uk



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Bernardo MARTÍNEZ
Automotive Industry Unit
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