EUROMOT observations on type-approval of engines operated on H₂ for agricultural & forestry tractors and non-road mobile machinery

GRPE 86th session, Geneva, 30 May – 02 June 2022
INTRODUCTION

• EUROMOT has been following closely the proposals for heavy-duty on-highway type-approval of engine operated on $\text{H}_2$ submitted by experts from OICA

• EUROMOT echoes the need for technology-neutral engine type-approval requirements adapted for low and net zero carbon fuels

• EUROMOT has commenced work to identify the changes necessary to facilitate such type-approvals
PARTICULARITIES OF NON-ROAD SECTOR

In comparison with heavy-duty on-highway:

• Agricultural and forestry tractor and non-road mobile machinery (hereafter the non-road sector) uses similar technologies, test methodologies & considerations for type-approval of engines

However, it also has:

• A broader range of engine sizes and applications
• Different regulatory structure at UNECE & EU level
DIFERENCC IN SCOPE: EU STAGE V versus R96.05

Rail and inland waterway applications are in scope of EU Stage V but outside scope of UNECE WP.29

Marine sector may also utilise different low/net zero carbon fuels (ammonia, methanol, DME, ...)

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DIFFERENCE IN REGULATORY STRUCTURE: EU ON-HIGHWAY versus NON-ROAD TYPE-APPROVAL

UNECE R49.07
Substantive requirements
Test methods
Administrative requirements

EU HD on-highway
Substantive requirements
Test methods
Administrative requirements

EU non-road Stage V
Substantive requirements
Test methods
Administrative requirements

UNECE R96.05
Substantive requirements
Test methods
Administrative requirements

CROSS REFERENCE
Latest available R49 test method used directly in both UNECE and EU type-approval

EQUIVALENCE
Type-approval to R96.05 cited as equivalent to EU Stage V type-approval via specific clause
NEXT STEPS

- EUROMOT plans to develop draft amendments to UNECE R96 and R120 as informal documents for the 87th session of GRPE, Jan 2023
- Intent to mirror technical approach for UNECE R49 and R85, adapted accordingly to the structure of the respective non-road regulations
- In parallel, EUROMOT will work as liaison organisation to ISO TC70 SC8 to adapt the ISO 8178 standard series for a broader range of applications and fuels
- In the interim EUROMOT anticipates manufacturers may utilise Art. 35 of Regulation (EU) 2016/1628 to request EU Stage V type-approvals where needed for engines operated on H₂, reflecting differences in:
  - scope between UNECE and EU Stage V regulations;
  - regulatory structure between EU on-highway and non-road, and;
  - timeline to amend EU non-road Regulation
Our Members
EUROMOT aisbl  ·  Rue Joseph Stevens 7  ·  1000 Brussels  ·  Belgium

Tel: +32 2 893.21.42  ·  E-Mail: secretariat@euromot.eu
TVA BE 0599.830.578  ·  RPM Brussels  ·  EU Transparency Register Id. No. 6284937371-73

www.euromot.eu