

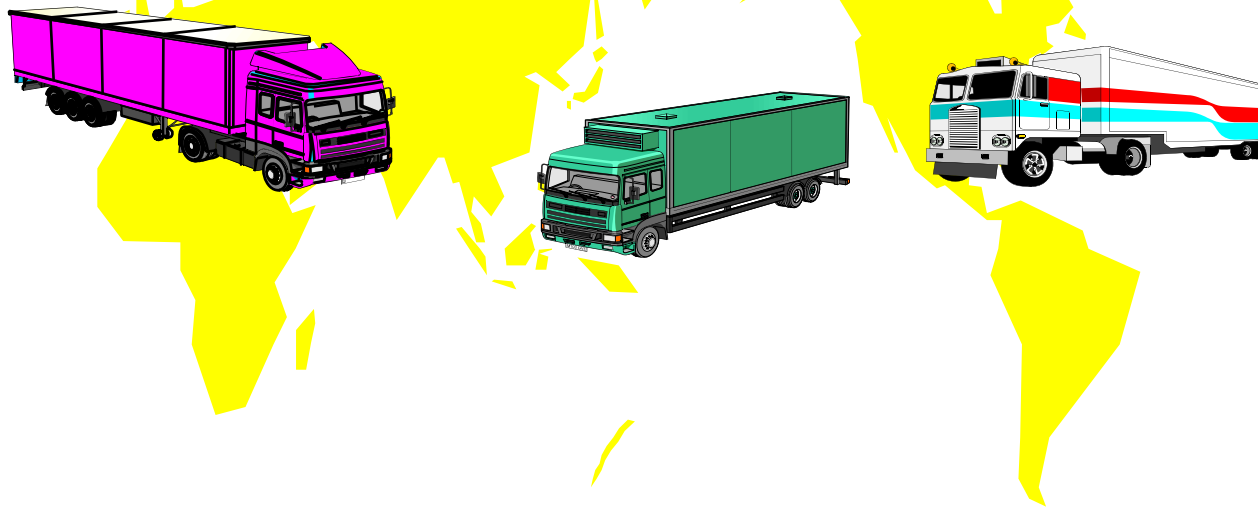


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GRPE/WHDC/FE08

Informal document No. GRPE-55-26

(55th GRPE, 14-18 January 2008,
agenda item 2(b))



Worldwide Harmonized Heavy Duty Emissions Certification Procedure

22nd WHDC, Geneva, 16 January 2008



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Option 1 – Engine Power/Work

- **Calculation of brake specific emissions (g/kWh) needs provisions on the use of engine auxiliaries**
- **It has been agreed to completely separate emissions and power measurement and to delete any reference to power regulations from the gtr**
- **Emissions test w/o fan (US procedure) generally preferred provided that emissions influence is small**
 - **evaluation will be done on basis of WHDC validation study**
- **List of auxiliaries will be added to gtr as additional annex**



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Option 2 - Reference Fuel

- **Introduction of average reference fuel that covers national reference fuel specifications generally supported**
- **DG-JRC offers their test facilities for conducting the test program around middle of 2008**
- **OICA manufacturers will supply engines (US07, Euro V) and two reference fuels (US and EU)**
- **Testing of B5 diesel fuel will be added to the test program**
- **Japan offers funding for additional test program**
- **EMA will check if additional test program with US07 engine is possible**



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Option 3 – Hot Soak Period

- **History of 20 minutes soak period in the USA not traceable**
- **5 minutes soak period is hardly feasible with CVS full flow system**
- **10 minutes (EU-COM proposal) could be compromise solution**
- **US EPA insists that soak period must not affect the level of stringency of US 2010 emission limits**
- **US EPA to inform if stringency comparison between FTP/20 vs. WHTC/10 will satisfy their requirements**
- **Task for engine and instrument manufacturers:**
 - **compare FTP/20 vs. WHTC/10 stringency level**
 - **determine which minimum soak period is technically feasible**



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Option 4 – Cold Start Weighting

- **Only limited field data with cold start statistics available**
- **WHDC members will look for in-use data, mainly from engine manufacturers and field operators**
- **JAMA will further elaborate their data from the 1990's**
- **TÜV Nord and WHDC secretary will elaborate statistical methods for determining the cold start weighting factor**



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Option 5 – PM Measurement

- **Test program at TÜV Nord will be funded by OICA members with a total cost of 100.000 €**
- **Two engines will be supplied by OICA members**
 - **one engine with DPF**
 - **one Euro V engine with SCR**
- **Anticipated timing: April/May 2008**
- **Additional investigations within the program.**
 - **determination of NOx measurement accuracy at very low levels**
 - **measurement of particle number according to PMP protocol**



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Extension of Scope to Gasoline Engines

- **General consensus to extend the scope to gasoline engines, as proposed by China**
- **Russia applies ECE R 49 to gasoline engines**
- **EU framework Directive will require testing of gasoline engines for vehicles > 3.5 to in the future**
- **China and Russia were asked to conduct WHDC validation studies with gasoline engines**
- **WHDC secretary will send letters to Chinese and Russian delegation and ask for support**
- **EMA will check application of WHDC cycles with US gasoline engine manufacturers**



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Alignment with Nonroad gtr

- **First draft of NRMM gtr presented at 55th GRPE**
- **WHDC and NRMM secretaries will put together the differences between NRMM and WHDC gtr's**
- **Solution will be presented by the end of 2008**



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Next Meetings

- **23rd meeting: 10 and 11 April 2008, Tokyo**
- **24th meeting: June 2008, Geneva**
- **25th meeting: October 2008, China asked to host**
- **26th meeting: January 2009, Geneva (submission of first draft)**
- **27th meeting: April 2009, Hungary offered to host**
- **28th meeting: June 2009, Geneva (GRPE approval)**



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Summary

- **Two test programs are defined and funded**
- **Test results likely to be available during summer 2008**
- **Extension of scope to gasoline engines seems to be feasible; China and Russia offered support to the technical program**
- **Additional funding and support to the WHDC work program is still welcome**
- **Work program is well on track**
- **For the time being, time line is confirmed**
- **WP.29 adoption in November 2009 currently not in jeopardy**