Worldwide Harmonized Heavy Duty Emissions Certification Procedure

22nd WHDC, Geneva, 16 January 2008
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.
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
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
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
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
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
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
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)
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