draft Minutes of the 6thMeeting of the informal group on Retrofit Emissions Control Devices (REC)   
6 June 2011, 10:00 – 12:30; Palais des Nations Geneva

# Welcome and introduction

The chairman, Mr Baarbé, welcomed participants (attendance list – document REC-06-03).

# Approval of the draft agenda

The agenda (document REC-06-01) was accepted without change.

# Approval of the draft minutes of the 5thREC meeting (held in Brussels on 11 May 2011)

The minutes of the 5th REC meeting were approved without change.

# General approach for the REC Regulation

1. **Presentation by the REC chairman**

The chairman reviewed the draft slides he had prepared for the presentation to GRPE.

The draft slides showed the general approach as being to evaluate the capability to meet the next or more stringent limit values for PM and/or NOx, plus a minimum percentage reduction. Germany is leading the development of text for REC-PM reduction. The chairman and the UK with input from Switzerland and AECC will prepare proposals for NOx.

Outstanding issues were listed as:   
- Is a particle number requirement needed to evaluate the efficacy of wall flow filters?   
- How much extra NO2 could be accepted for filters with passive regeneration?   
- How to guarantee good (low load) operation of DeNOx systems?   
- Which test cycles and preconditioning will give good repeatability and representativity for real  
use?  
- How to control or prevent the formation of toxic substances due to catalytic activity, without  
excessive cost?   
The chairman suggested that monitoring the system, including malfunctions, should be added to the list of outstanding issues.

The meetings held to date were summarised. Further meetings are planned for 20 and 21 September (to be confirmed) at DG-JRC in Ispra, plus a further meeting in November, possibly in Den Haag. The objective is to present a 1stdraft for the UNECE REC Regulation to GRPE in January 2012.

In answer to a question from the chairman, M. Billi said that he had suggested an approach to avoid conflicts with the machinery Directive regarding safety etc. This would essentially be a requirement that the supplier should provide adequate instructions to ensure other requirements are maintained. The chairman proposed that this issue will be discussed at the next working group meeting in September at the DG-JRC.

The draft slides have been reviewed and amended following comments received and will be presented to GRPE as informal document No. GRPE-62-12 reg. agenda item 4(d).

1. **Discussion by REC participants**

The issue of the inclusion of different stringency levels was discussed. The chairman felt that, after discussion with GRPE chairman and secretariat, the proposal is acceptable under UNECE rules. The UNECE secretariat commented that a minimum level of stringency, accepted by all contracting parties, would be suitable, but the acceptance of higher stringency levels would then be a matter for individual contracting parties.

Discussion points included the acceptability of contracting parties imposing, at a national level, additional requirements and the potential to include Euro VI. M. Hubert advised that if a contracting party accepts the REC Regulation they have to accept all approvals to it, but they could – on a national basis – discriminate between levels (e.g. on taxation or entry to Low Emissions Zones). The issue of how to handle different performance levels was discussed by participants, including the need to include different performance levels that may be more appropriate for some contracting parties than for others and with suggestions including concentrating only on the higher performance levels, the possibility of incentivising specific performance levels, or incorporating only test procedures in the Regulation with national or regional authorities selecting which level to use to for access to LEZs, for instance.

Participants commented that the Swiss procedures are somewhat different in that the requirements exceed current Euro levels; that the objective should be to develop a framework that would allow acceptance in each Member State and discriminate between ‘good’ and ‘less good’ traps; and that the system should also ensure that systems provide an improvement from one Euro level to another. Some participants considered that systems that increase NO2 should not be acceptable, but others expressed concern that the majority of existing DPF systems result in a marginal increase in NO2 and excluding such emissions would eliminate the vast majority of the market. It was also commented that if contracting parties wish to exclude an NO2 increase they could accept the combined NOx and PM systems. It was noted that the proposal is to have requirements for systems that gave no increase in NO2 as well as for those that resulted in a limited increase in NO2.

The possibility of first developing procedures for the lower level of performance and then upgrading in a later step to include the higher level(s) was discussed but was felt not to be viable due to the time need to then achieve a Regulation for the more stringent target levels. Further alternatives considered were to handle the different levels as 2 (or more) separate Regulations or to develop one regulation for the test procedures and a second for the performance standards. Overall, it was felt that having only a harmonised procedure would not be sufficient resolved by separate Regulations. The REC chairman concluded that this clearly remains a contentious issue and agreed that the method of handling different levels would be raised with the GRPE chairman. Most participants supported that the approach should be to simultaneously develop the two levels, with contracting parties able to accept which level they adopted. Following a tour de table on the views of contracting parties the REC chairman concluded there was a clear majority to proceed with the development of a single regulation with different stringency levels, for both NOx and PM.

# Report to GRPE-62 meeting

1. **Review and finalisation of informal document for GRPE-62**

This was covered in the previous item.

# Discussion of draft REC Regulation – document REC-06-02

1. **Draft PM part the REC draft**

M. Schulte gave a brief overview of changes since the last meeting. These include

- a definition of ‘application range’ and ‘engine baseline emissions’ in section 3;

- a revised Table 4.4 on the REC matrix for Reg. 96/categories A & B, Table 4.5 for category C and Table 4.6 for category D (combined PM and NOx), with the three tables now showing all power ranges;

- text for section 6 covering the application range;

- requirements on modifications to engine baseline as section 7;

- text for section 8 showing that all testing should be done using the methods defined in UNECE Regulations 49 or 96 as appropriate;

- determination of NO2 emissions as section 15.8, based on German Anlage XXVII requirements but with some modifications as discussed at the previous meeting. This includes table 15.1 on additional ugas values (i.e. ratio between the density of the exhaust component and the density of exhaust gas) for NO2 determination;

- Annex I now provides a table defining the application ranges;

- Annex II provides a flowchart defining the test sequence for PM determination. In essence, the higher the performance, the lower the testing burden;

- NO2 is deleted from the annex on secondary emissions.

Participants were asked to send any comments direct to M. Schulte.

1. **Draft NOx part of the REC draft**

The REC chairman said that a draft will be circulated as soon as possible and ahead of the REC-07 meeting in Ispra.

# Next meeting

The dates for the REC-07 meeting are 20-21 September at DG-JRC, Ispra, Italy. Information will be sent out by the REC secretariat.

# Any other business

M. D’Urbano gave a presentation (document REC-06-05) on Swiss experience with SCR and combined systems. This was conducted as part of the VERT-dePN project. There have been 2 papers on this: SAE 2009-01-0284 and SAE 2011-01-1139.

Various types of systems have been investigated, with further being examined this year. Tests performed included stationary and dynamic test cycles. Some initial results were shown, including testing on the NRTC, ETC, WHTC, NYCC and Braunschweig cycle.

The requirements are not currently linked to Swiss Regulations, except on secondary emissions. A table of initial thoughts on requirements for NOx, NH3 and N2O (based on recommendations from test laboratories) was presented showing 3 different levels of NOx performance.

19/07/2011