

**Draft Minutes on the 3rd GRPE-REC informal group meeting
11 January 2011, 14:30-17:30; Geneva**

1. Welcome and Introduction

The chairman, Henk Baarbé, welcomed the participants to the meeting.

2. Approval of the draft agenda

The agenda was adopted without change. However, the chairman noted that working documents were received after the agenda was issued and that therefore the agenda does not adequately reflect the documents to be discussed.

3. Approval of draft minutes of the REC-02 meeting (Brussels, 27 September 2010)

The minutes of the REC-02 meeting were adopted without change.

4. Mandate for the REC informal group of GRPE

The chairman informed the group that the updated mandate was approved during the 60th meeting of GRPE and that this is attached to the minutes of that GRPE meeting.

5. Presentations and discussion documents from stakeholders

5.1. Draft REC Regulation

The chairman noted that on 17 November 2010 there had been a meeting hosted by VDMA to work on a 1st draft of the new REC Regulation that is based on the German Anlage XXVII.

Since then, TÜV's Schulte had continued to work on that draft to the stage to be presented today and the chairman thanked him for the work. It is recognised that further work is needed.

Schulte then presented the current draft of the REC Regulation. Written comments were received from Germany (document REC-03-05) and were addressed during the presentation.

The current draft regulation covers only CI engines for both HD and NRMM. The scope covers 3 different classes. Class A are systems providing PM reduction without significantly affecting NO₂ emissions; Class B: systems dealing only with reduction of NOx emissions; and Class C: systems for combined PM and NOx reduction.

CEMA asked that a paragraph on the purpose of retrofit be included in the scope. It was proposed that the wording be changed to make clear that the scope is retrofit systems to be fitted to vehicles and not directly apply to the vehicles themselves.

Euromot said that the scope should be clarified as applying to engines within the scope of Reg.96, rather than only to engines approved to Reg.96.

AECC noted current scope would exclude constant speed engines and this should not be the case. This was agreed and it will be checked that the wording in the latest version of Reg. 96 is correct before equivalent wording is included in the draft REC Regulation. It was also noted that Reg.96 will not cover rail and inland waterway applications, unlike the EU NRMM Directive.

Schulte then described Section 2 that provides definitions taken from existing Regulations with new ones where needed. Those still to be completed include a definition of particle number. He said internal references within the document will need to be rechecked.

Germany pointed out that the terms 'NOx reduction system' and De-NOx system' and both used and this should be harmonised.

In Section 2.4, the level of a 'significant' increase in NO₂ needs to be discussed and specified. Euromot pointed out that California sets a limit of an increase of 20% over pre-retrofit emissions. The wording of this section will be checked.

The chairman felt that this level of a 'significant' increase in NO₂ is too high. It was agreed to consider this further with the test procedure.

The statement in section 2.21 was queried. This states that measures must be approved by the engine manufacturer if the EGR control is modified. It was not clear what responsibility this puts on the engine manufacturer. It was also stated that this would only be relevant for external EGR.

The UK suggested requiring that the retrofit manufacturer demonstrate that any changes do not adversely affect the engine. It was agreed that a requirement to stay within the Type Approval specifications of the vehicle/ machine/ engine would be appropriate, but at the same time it was queried how this would be determined. It was suggested that such a requirement would apply to the retrofitter or machine/ vehicle owner, but not the engine manufacturer. The chairman clarified that the durability test is for the retrofit system not for the engine. VDMA suggested that engine/ vehicle durability would be taken care of by the market but UK, supported by Germany and EMA, had concerns that any problems would bring into disrepute the reputation of retrofit generally and of the Regulation. OICA noted that the involvement of the engine manufacturer is essential if the system is to be done properly. VDMA said that both CARB and VERT simply require that the engine stay within OEM specification. It would only be necessary to involve the OEM if the retrofit took it outside that specification. EMA commented that there are times when retrofit cannot be implemented because it takes the machine out of its specification. It was agreed that that this issue would be considered further at a later date.

The issue of particle number, to be defined in section 2.23, and the associated measurement requirements were then discussed. The need to include particle number was queried.

AECC said that PN measurement is needed for efficiency measurement for low emissions engines. It was noted that there are authorities etc. that foresee requirements for fitment of DPFs even to Tier 4 engines. Euromot felt that requirements should not go beyond current legislative requirements as PMP does not apply to NRMM or to pre-Euro VI HD. Particle number requirements would have no effect for a highly efficient filter compared to assessment using PM only.

In answer to such concerns, the chairman said that the REC requirements also foresee NO₂ measurement/ limitation which is not included in current OE legislation.

Section 3 provides the required reduction levels, proposed as:

	Reduction efficiency (%)	
	NOx	PM / PN
Reduction Level 1	33	50 [66] / 30
Reduction Level 2	66	80
Reduction Level 3	80	90 [95]
Reduction Level 4	95	95

It was clarified that for combined NOx and PM reduction systems any combination of the NOx and PM levels can be selected.

Tables 3.3 and 3.4 show the applicability of the various classes of retrofit for the Euro level or NRMM stage respectively of the engine to be retrofitted. It indicates the minimum requirements (e.g. a Class A system could be used to upgrade a Euro III vehicle to Euro IV for PM, whereas a class C system would be required to upgrade both PM and NOx to Euro IV).

Schulte suggested that numerical NOx and PM limits should replace the text in the current document specifying the Euro/ NRMM stages. This would clarify as it is not intended to indicate that retrofitting could allow upgrading to the full requirements of a complete Euro stage, only to specific NOx and/ or particulate emissions requirements of that Euro standard. The scope does not cover retrofitting for Euro I or II or for NRMM Stage I.

Germany queried whether it should be possible to claim upgrades of more than 1 stage. This could enable such vehicles to stay in the fleet for longer instead of being replaced by newer vehicles. They also suggested that the number of reduction levels should be reduced from 4 to 3 to simplify the procedures.

EMA said that there could be benefits in basing the system only on percentage reduction. VDMA noted that NRMM engines prior to Stage IIIB would not have been tested on the NRTC, so the table was not valid.

Sweden felt that the matrix is too complex. They proposed that only the percentage reduction is required. They also said that the cycle to which the engine is certified is not that important as long as the most recent transient cycle is used for the approval of the retrofit system.

The UK considered that it is important to have limit values that can be related by the customers to Euro limit values and that the test cycle would not necessarily have to be the same as that used for the Type Approval of the original engine.

Germany said that percentage reduction efficiencies would not be suitable for authorities to determine the applicability of incentives. VDMA commented that the percentage reduction rates were originally derived from the reduction rates needed to move between the HD/ NRMM emissions stages. The retrofit emissions 'levels' could be related environmental sticker levels.

Germany, AECC and OICA agreed that numerical limit values should be included, but then it was suggested that contracting parties could then select whether they would require percentage or limit value requirements to be met.

The chairman noted that UN-ECE rules do not permit to concurrently have 2 different levels of stringency under the 1958 Agreement, but it would be possible to have different levels that are applicable to different base engine levels. He was going to seek clarification on this from the UN-ECE secretariat.

South-Africa asked that the group should bear in mind territories that do not currently apply the most stringent emissions requirements.

Schulte said that the document will now be updated to help clarify the proposals and to accommodate suggested changes. The chairman invited all participants to provide written comments to the draft Regulation.

5.2. National authorities

Germany had provided a procedure for measurement of NO₂ (document REC-03-06). For the next meeting Germany will provide a version in English. TÜV said that some adaptation will be needed to ensure that raw emissions (not only NO₂) are correct for the engine to be used for certification.

EMA noted that CARB requires a cap of a 20% increase in NO₂ compared to the base engine level and defines how to measure this. It was also noted that the level of NO₂ will be affected by the proposal to allow continued use of an existing DOC in the system. EMA noted a study from California on the subject of the effect of DPFs on NO₂ emissions.

6. Next steps

6.1. Meetings

The chairman mentioned that a further VDMA meeting is scheduled for 5 April 2011. This will probably be used to update the document.

A further meeting of the GRPE-REC informal group will be arranged before the next GRPE session, probably towards the end of March (*note: since the meeting this has been arranged for 09:30 - 13:00 on 31 March 2011 at DG-ENTR, Breydel building, Brussels*).

7. Other business

There was no other business.