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European Commission

Particle Measurement Programme Informal Working Group (PMP)

Progress Report and Next Steps

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EXHAUST EMISSIONS

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Progress report

Sub-23 nm particles

- JRC's Report on sub-23 nm particles circulated among group members for comments
- Main conclusions: There is no urgent need to reduce the cut-off size below 23 nm on the basis of the current knowledge and engine/aftertreatment technologies
- The development of a robust procedure to measure particles down to 10 nm will continue in case of future needs (i.e. investigation of the influence of catalytic stripper properties on the measurement)

Measurement of particle emissions during regeneration

- An overview of the issues potentially impacting the measurement of PN during regeneration of GPF and DPFs on light-duty vehicles was presented and discussed in the last PMP meeting (30th meeting, 3rd -4th April,Brussels)
- A work plan to investigate the open issues has been circulated for comments
- These documents are available in the PMP informal group section on the UNECE website

Measurement of particle emissions from NRMM

- An overview of potential issues related to the measurement of PN of NRMM was presented and discussed in the last PMP meeting (document available in the PMP section of the UNECE GRPE website)
- A guidance for the testing and measurement of PN from NRMM has been prepared and just circulated to the group for comments

NON-EXHAUST EMISSIONS

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GRPE meeting of January 2014

- Following the submission of informal documents by the Russian Federation, WP.29 also agreed with the GRPE decision to assign the follow-up of the issues concerning the emissions of particles from tyre and brake wear to the PMP informal working group.

- GRPE acknowledged the information provided by the PMP informal working group and the Russian Federation and requested the PMP group to propose in the June 2014 session of GRPE a possible roadmap on how to proceed further with the issue of particles from tyre and brake wear.

Terms of Reference (ToR) of PMP

- A prolongation and extension of the mandate of the group, in relation to the development and validation of new test procedures, should be considered in due time by GRPE (e.g. in relation to PN measurement systems compatible with PEMS, tyre / brake wear,…)

Introduction

- The available data provides a quite clear picture for certain aspects related to non-exhaust particle emissions (e.g.contribution of brake and tyre and road wear particles to traffic related particulate matter (PM) emissions as well as of the typical PM10 emission factors)
- On the other hand, there are many other aspects for which the current knowledge is not sufficient to reach sound conclusions.
- This is due in some cases to the scarcity of data, while in other cases the results reported in the publicly available studies are either not consistent or even contrasting as a consequence of the use of different measurement techniques and sampling procedures

Introduction

- Addressing the many open issues related to non-exhaust particle emissions would require large research projects with a multidisciplinary approach and important resources would be needed.
- PMP group: mainly experts on exhaust emissions as well as on techniques and sampling systems to characterize particles emitted by engines.
- Due to the complexity of the matter, the expertise and the limited resources available within the PMP group, it is the view of the group that a valuable contribution can be provided only on specific but still important issues

PROPOSED APPROACH

Scope

- The activities related to non-exhaust traffic related particle emissions to be carried out within the PMP group will focus on the following sources: brake wear, tyre and road wear, clutch wear.
- Road dust resuspension was decided not to be examined - at least within the PMP group - due to the fact that resuspended dust derives from multiple sources, some of which are not traffic related (i.e. industry, natural sources)
- Experts on other fields relevant to the addressed topics will be invited to attend the informal meetings of the PMP group that will be split into two sessions, one dedicated to exhaust emissions and the other to non-exhaust traffic related particle emissions.

Work items

The PMP has identified the following work items:

- Investigation of typical driving patterns and in particular of typical accelerations/decelerations

  The objective of this activity is to reach a shared definition of typical/normal driving conditions as well as of severe, extreme or infrequent conditions

- Compilation and monitoring of the on-going research projects on non-exhaust traffic related particle emissions.

  There are several on-going research projects (e.g. REBRAKE, TIP) addressing different issues. Information (objectives, timing, experimental approach, expected results) about these projects will be collected in a living document that would be regularly updated

Work items

- Networking and exchange of information with experts in the field of non-exhaust traffic related particle emissions

  Objective: Promoting the exchange of information among the PMP group and the renowned experts in the field of non-exhaust traffic related emissions.

- Development of a set of recommended measurement techniques and sampling procedures.

  The lack of standardized approaches in investigating the different aspects of non-exhaust traffic related particles has often led to inconsistent or even contrasting results. A set of recommended measurement and sampling procedures will be developed as a guideline for future studies

Next steps

- A face to face meeting is planned for September 2014