

**PMP CHAIRMAN'S SUMMARY**  
**JANUARY - MAY 2006**

**Introduction**

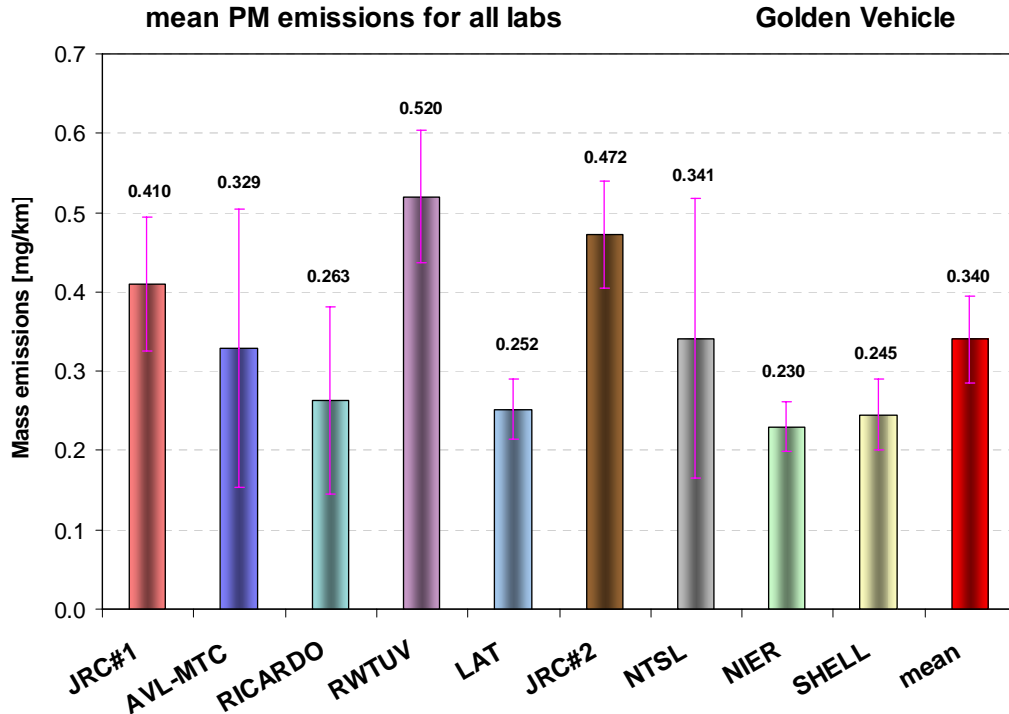
This document provides a summary of the progress made in the Particle Measurement Programme since the last Working Group meeting on 16<sup>th</sup> January 2006. It also summarises future plans and dates. Working Group members are welcome to submit comments on future plans and activities.

**Light Duty Inter-Laboratory Correlation Exercise**

**Progress of Exercise**

Since the last meeting the Golden Vehicle and System have returned from Korea. Minor damage sustained to components of the Golden System's Volatile Particle Remover has been repaired by Matter Engineering and the Golden System has undergone its mid-exercise calibration at AEA Technology. Testing has been completed at Shell Global Solutions with a number of additional Euro 4 vehicles being tested (including a DPF equipped Mercedes Vito, a Toyota Avensis D-CAT, and a Vauxhall (Opel) Astra). Measurements at Shell were also taken using an alternative measurement system (Dekati FPS + Grimm CPC). Testing at UTAC was completed on 1<sup>st</sup> June with a DPF equipped Peugeot 207 having been tested in addition to the Golden Vehicle and additional measurements taken with an ELPI system.

**Results**



**Figure 1. Golden Vehicle PM - all labs having reported to date**

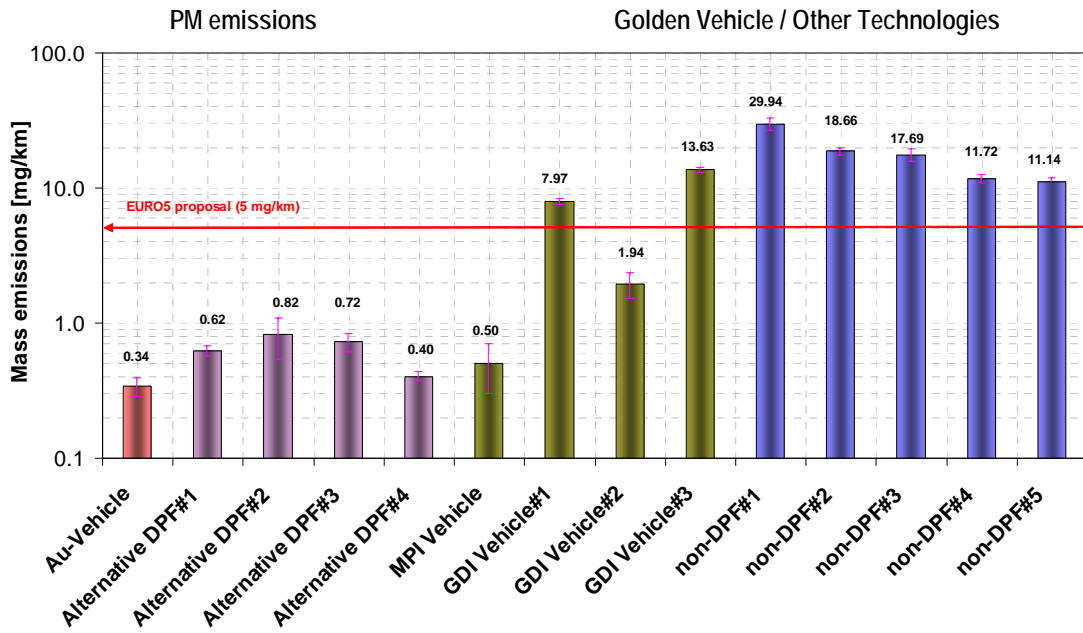


Figure 2. PM emissions for all vehicles - all labs having reported to date

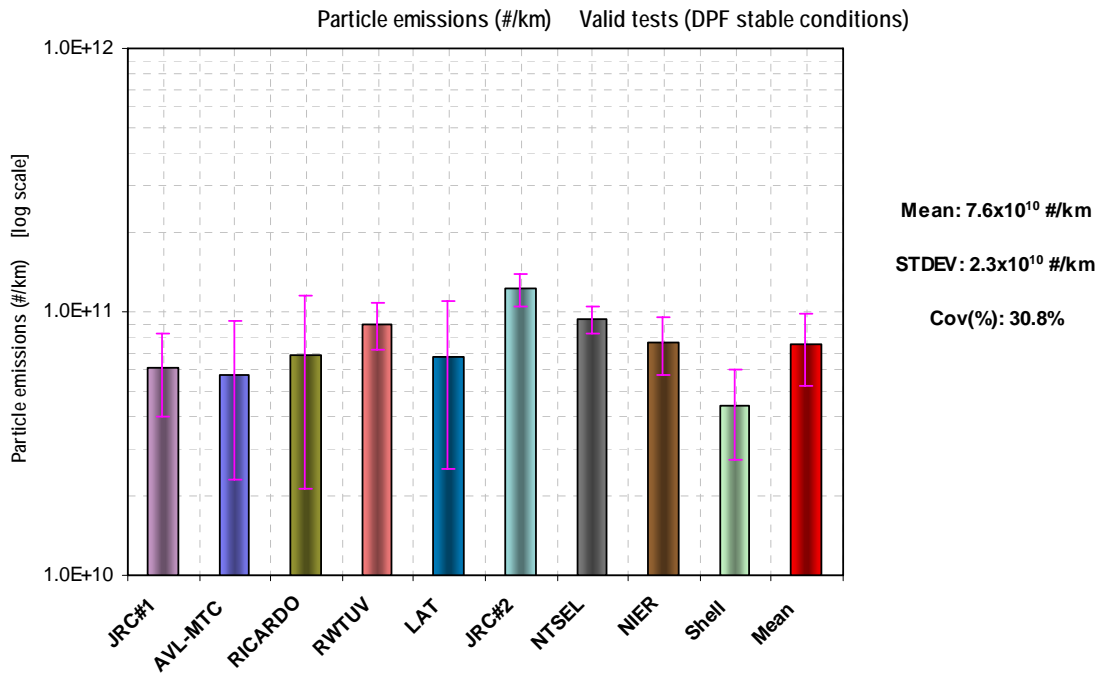
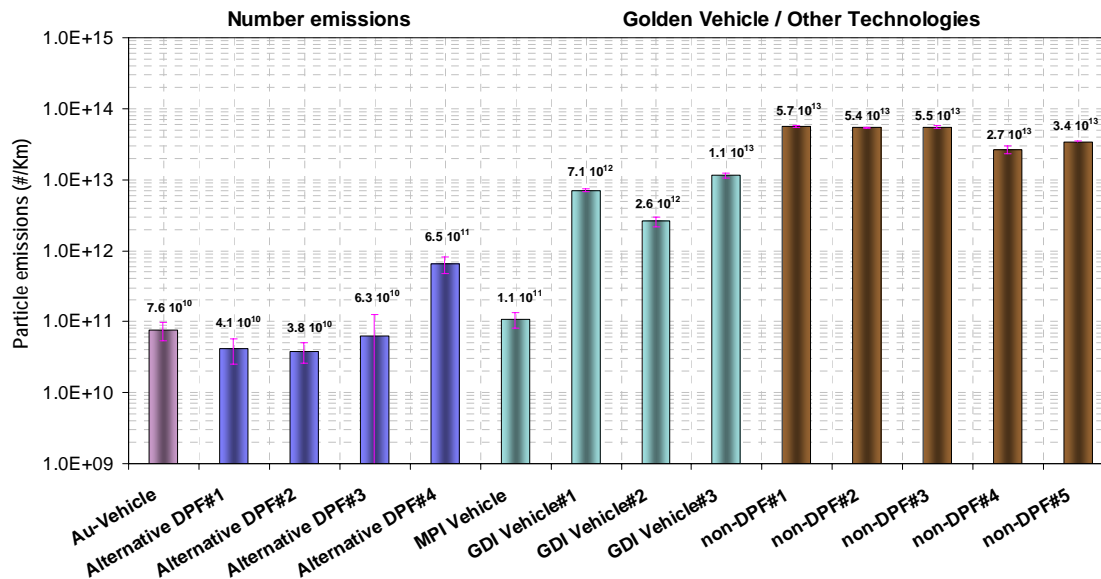


Figure 3. Golden Vehicle PN emissions - all labs having reported to date



**Figure 4. PN emissions for all vehicles - all labs having reported to date**

Following completion of JRC's book-end tests a full set of valid test results will be circulated to Working Group members as soon as possible. In addition to the above results these will include both JRC's results and those from UTAC, which were not available at the time of publication of this note.

### Completion of Exercise & Investigative Experiments

The Golden Vehicle and System is expected to arrive at the JRC on 7<sup>th</sup> June for the bookend testing to conclude the exercise. During this testing there will be an **Open Day** for Working Group members on **26-27 June** for those wishing to see the new measurement techniques in action. Those interested in attending should contact Penny Dilara ([Panagiota.dilara@jrc.it](mailto:Panagiota.dilara@jrc.it), tel: +39-0332-789207, fax: +39-0332-786328) in order to arrange entrance permits, transportation and accommodation in the JRC area.

JRC will also be conducting a number of extra investigative experiments to examine the following issues;

- Effect of dilution tunnel conditioning on measurements
- DPF regeneration emissions
- Stabilisation of DPF emissions post regeneration
- 7C cold start performance
- PMP v Regulatory PM correlation
- Teflo filter paper PM test results
- Effect of cyclone pre-classifier on measurements
- Calibration of GPMS components with solid exhaust particles
- Emission measurement on other test cycles

There may then be some further experimental work at AEA characterising the components of the Golden System.

## **Final Report**

JRC will be drafting a final report following completion of the exercise. It is intended that a draft will be available circulated prior to a **Working Group meeting on 12 September to discuss the draft report**. The meeting will take place at the JRC in Ispra. An outline of the report is attached in Annex I for comment.

## **Heavy Duty Inter-Laboratory Correlation Exercise**

Following completion of the Light Duty ILCE a **kick-off meeting for the Heavy Duty ILCE is planned for 13 September**. This will also be held at JRC in Ispra, following the meeting to discuss the Light Duty draft report. As indicated previously, participants in the Heavy Duty programme will be limited to 5 or 6 EU based laboratories for logistical reasons. However additional laboratories are welcome to conduct their own testing in accordance with the Heavy Duty Test Protocol and submit their data to the Working Group as supplementary data to the ILCE if they wish.

The UK Department for Transport is in the process of sourcing a Golden Engine for use in the programme and will inform Working Group members of the detail of this engine as soon as they are known.

## **Calibration Procedures**

Following discussions at the last meeting further written comments on the draft calibration procedures were received from OICA and revised comments from JASIC. AEA have held a teleconference with OICA to discuss their comments and are preparing an updated calibration procedure document. This will be circulated when available for discussion at the 12<sup>th</sup> September Working Group meeting.

**Chris Parkin**  
**PMP Chairman**

**06/06/06**

## **Light Duty Inter-Laboratory Correlation Exercise (ILCE) Final Report Structure**

### **Executive Summary**

Aims of the ILCE & overall conclusions

### **Introduction**

Aims of PMP & ILCE

Nature of ILCE test programme (GV, GE, GPMS, participants, no of repeats etc)

### **Results**

#### PM

Valid results from all labs

Repeatability & reproducibility

Performance of different vehicle technologies (mean & sd)

Results of JRC investigations e.g. - PMP v Regulatory PM correlation

Teflo filter paper PM test results

#### PN

Valid results from all labs

Repeatability & reproducibility

Reference CPC results & discussion

GPMS Calibration results

Performance of different vehicle technologies (mean & sd)

Comparison of GPMS results with those of other systems & discussion

Results of JRC investigations e.g. - dilution tunnel conditioning  
regeneration & stabilisation of DPF  
-7C cold start performance, etc

#### Gaseous

Valid test results

Repeatability & reproducibility

### **Conclusions**

Repeatability & reproducibility of PMP PM method

Repeatability & reproducibility of PN method

Significance relative to background PN levels

Vehicle PN stability

Performance of different vehicle technologies

Suitability of PM & PN for use at type approval

Limitations to use at type approval e.g. PN for DPF storage only on a stabilised DPF

Considerations regarding regulating PM and PN emissions

Recommendations regarding vehicle & tunnel conditioning

Recommendations for changes to draft test procedures/measurement system specification.

Recommendations for Further Work e.g. - accounting for PN during regeneration.