Stringency
of OICA ASEP concept

Issued by the Netherlands
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Assumption and Question

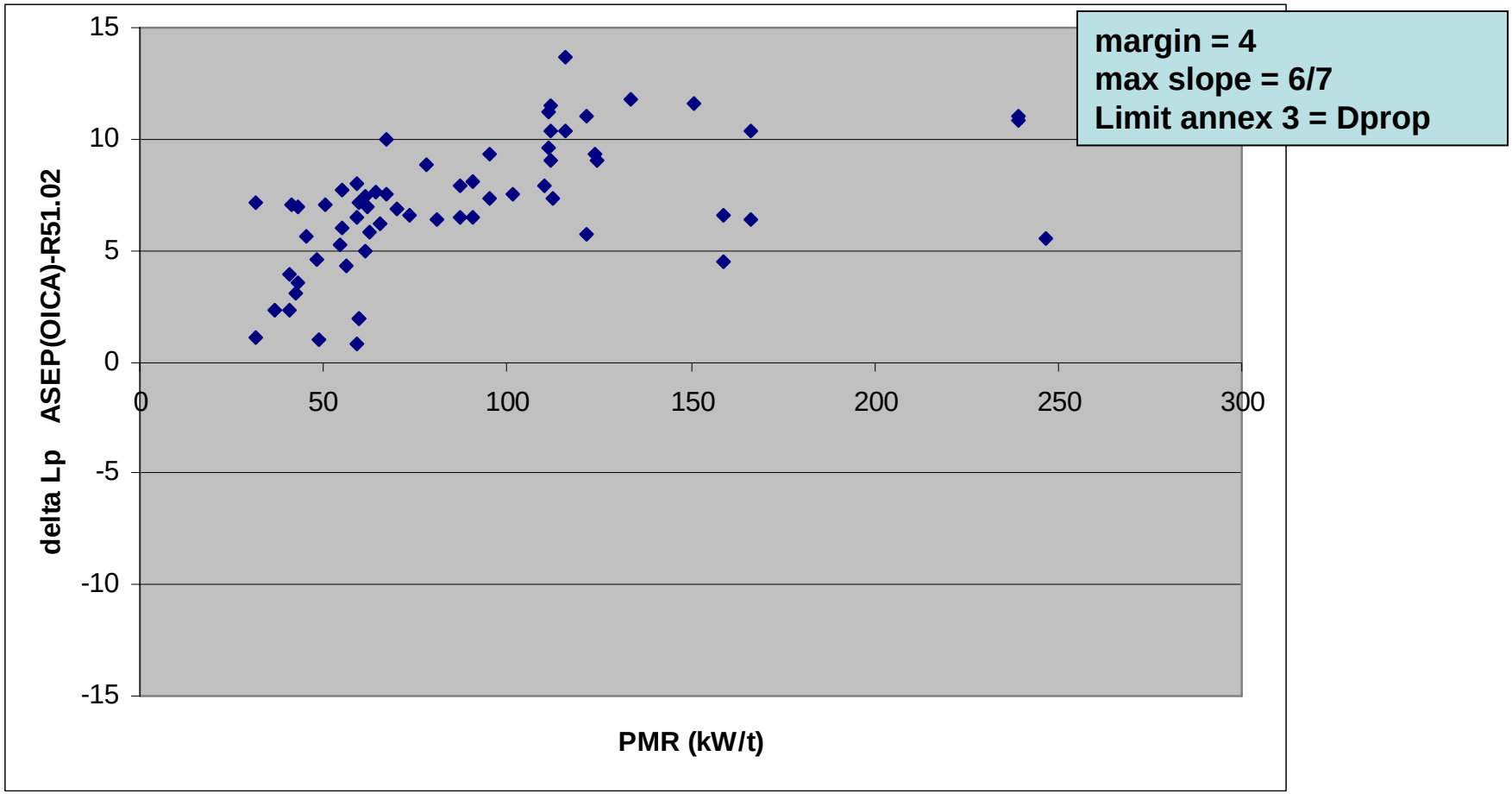
- Assumption: the default values for stringency are
  - Annex 3: German proposal
    - 72, 73, 75 for M1 (<120, 120-200, >200 kW/t)
    - 74 for N1
  - ASEP OICA proposal
    - Margin = 4 dB
    - Slope = 6 (2nd gear) and 7 (3rd gear)

- Question: what is the maximum legal noise in R51.03 compared to R51.02?

Work plan

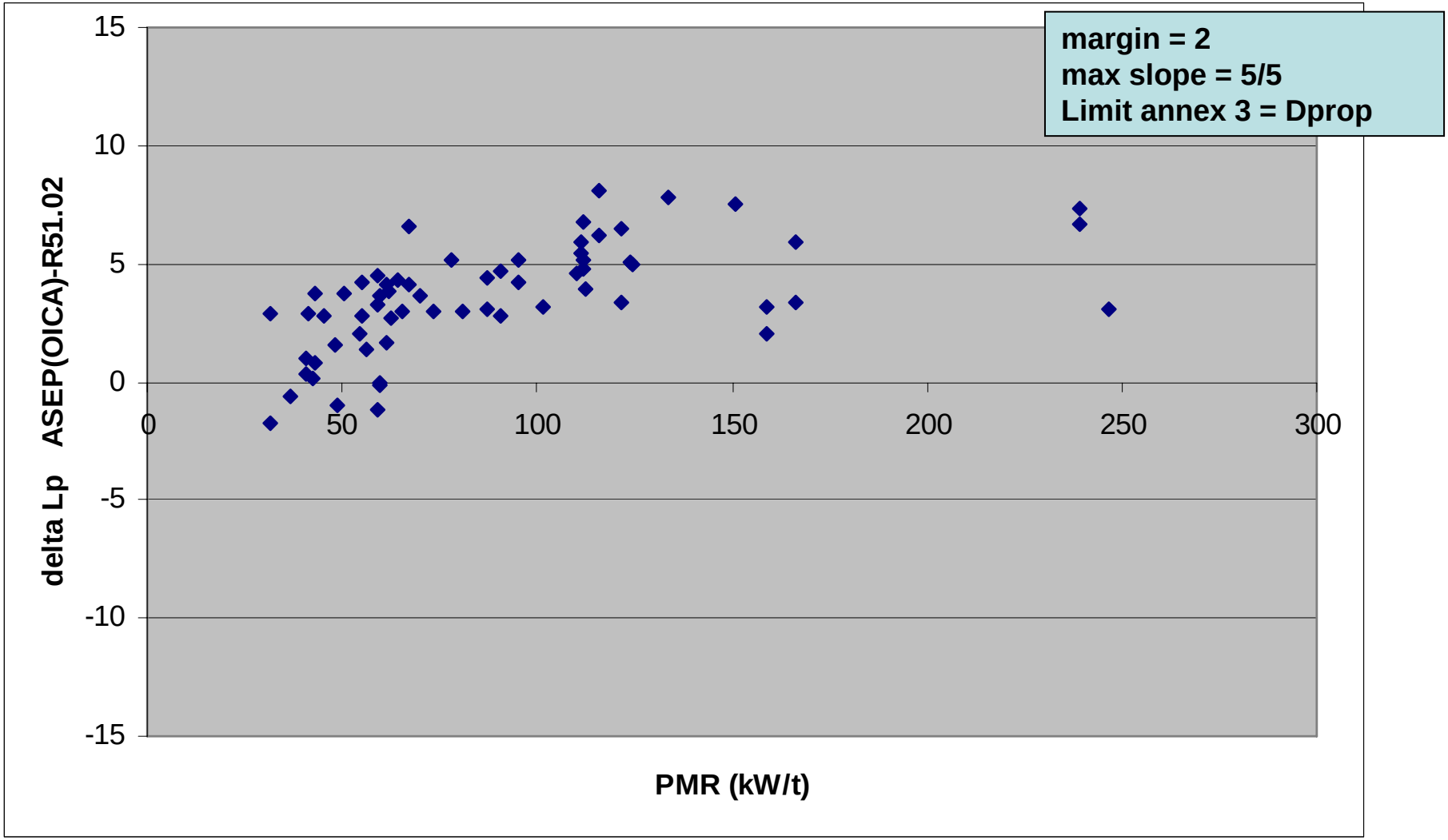
- The R51.02 operating condition at Lmax was taken from the dBase (if available)
- The R51.02 limit value was increased by 1,5 dB (rounding and allowance)
- The OICA ASEP limitation was calculated at the R51.02 operating condition, under the assumption
  - The vehicle noise is adjusted to match the annex 3 limit value
  - The vehicle noise is adjusted to match the maximum allowable ASEP requirements

Stringency of ASEP compared to R51.02

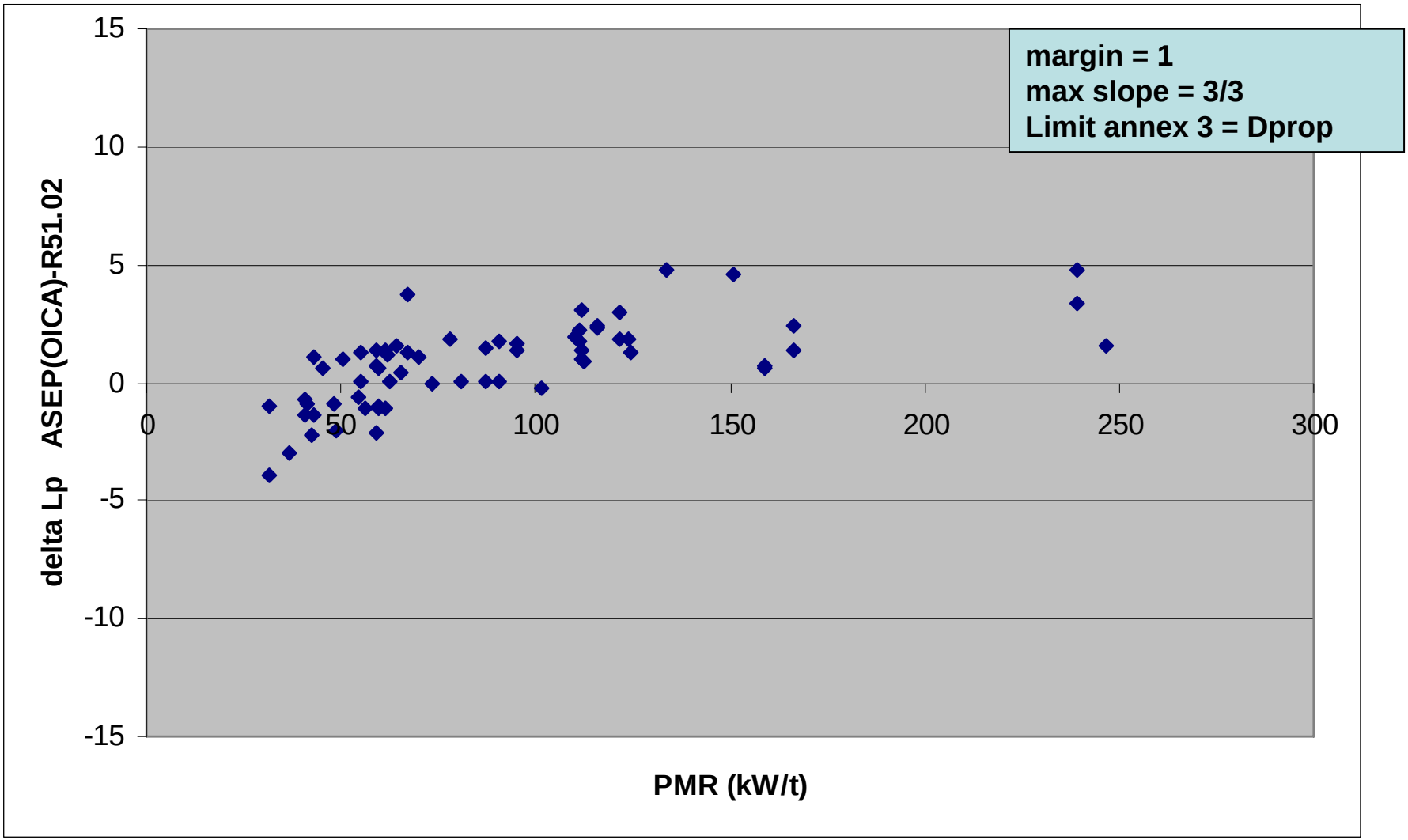


- With this default level of stringency of the OICA concept, all vehicles are allowed to make more noise compared to R51.02
- More stringent limiting values have been investigated

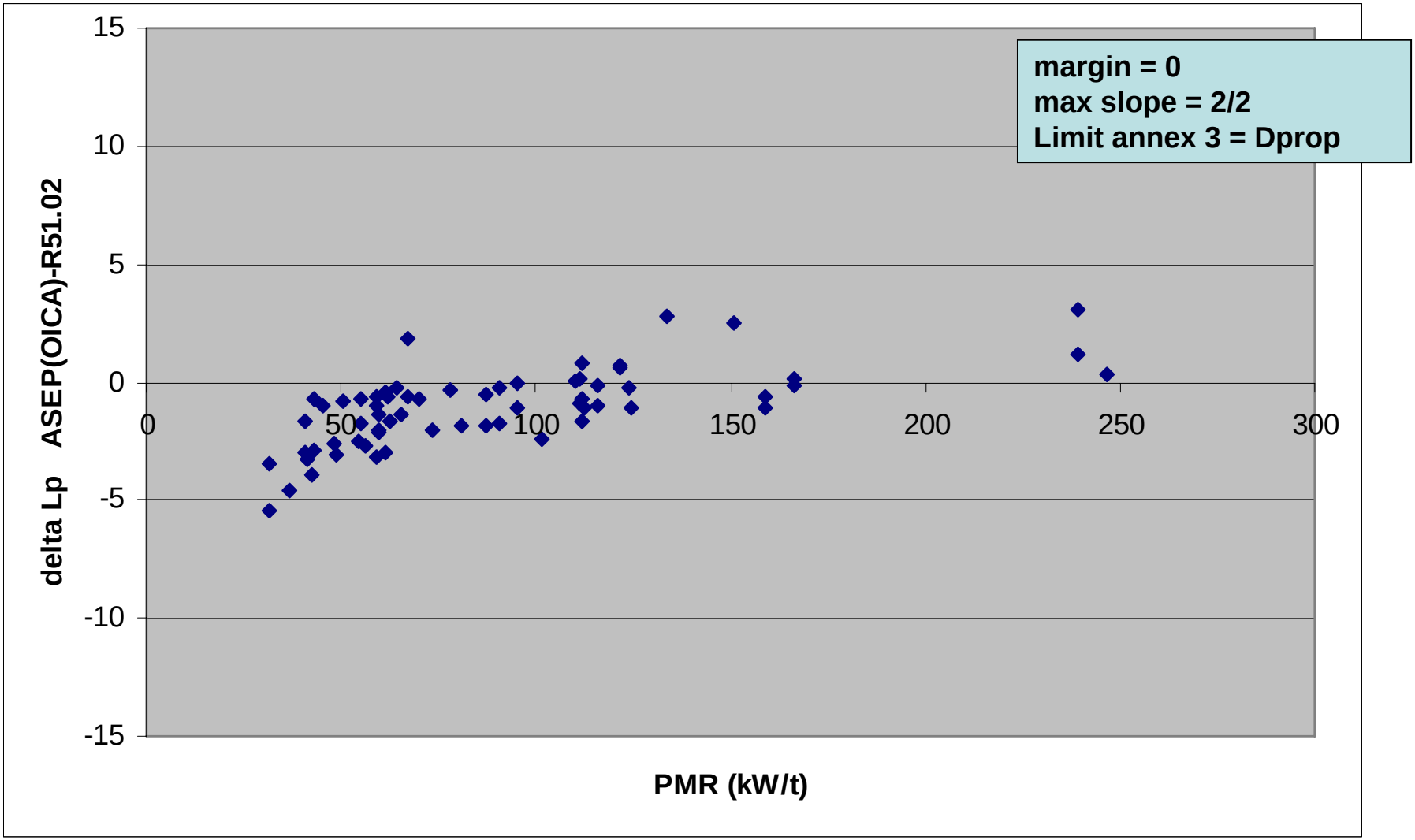
Stringency of ASEP compared to R51.02



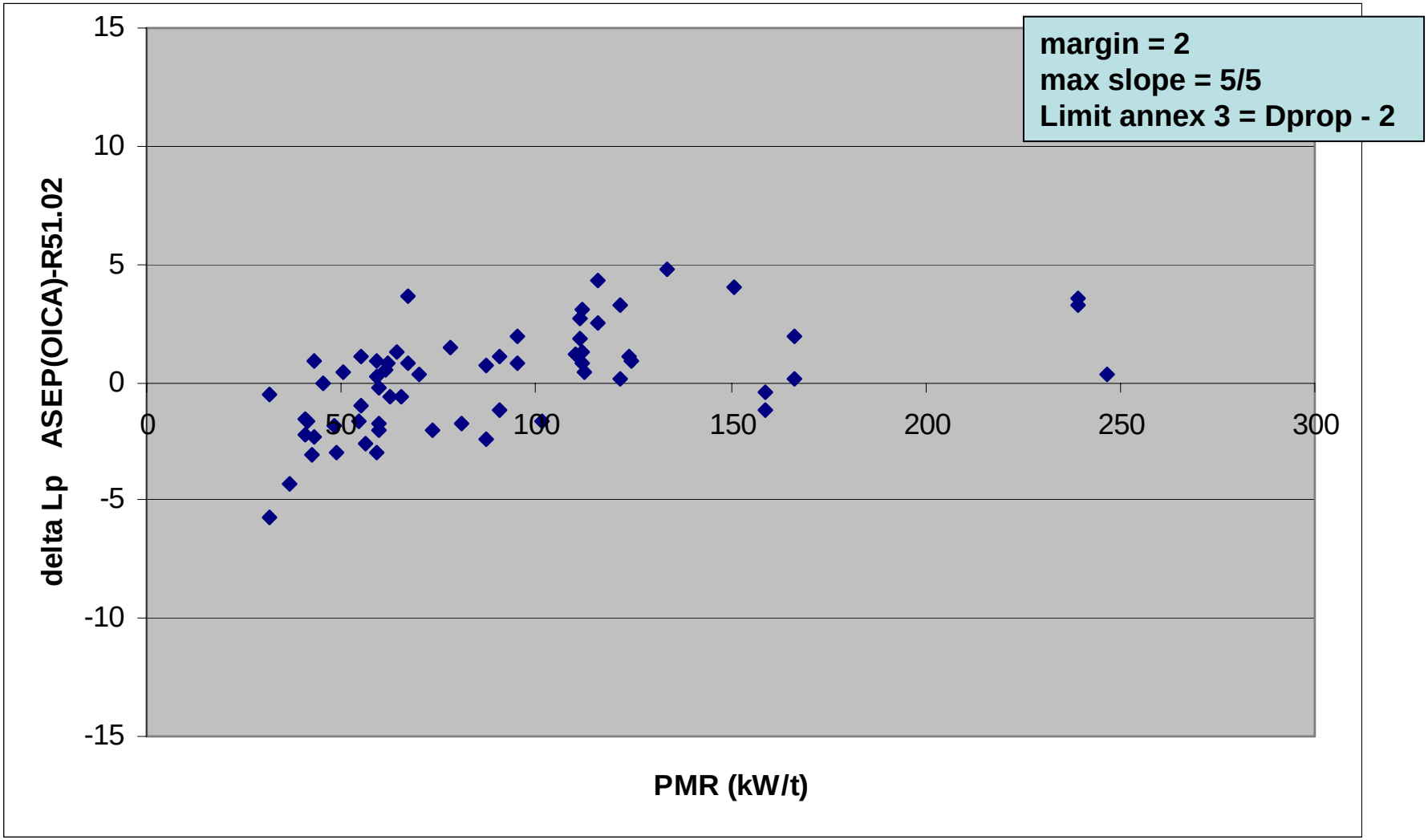
Stringency of ASEP compared to R51.02



Stringency of ASEP compared to R51.02



Stringency of ASEP compared to R51.02



Conclusion and outlook

- The current default limiting values (German proposal for Annex 3 and OICA proposal for ASEP) will allow vehicles to make up to 14 dB more noise under R51.02 operating conditions compared to R51.02
  - The allowable increase rises with the PMR
  - The individual vehicles show significant scatter around an average level

- Changes to the ASEP limiting values as well as to the Annex 3 limiting values have to be considered to come to a stringency level which is comparable to R51.02
  - Even with optimized coefficients it is unlikely that the scatter can be totally avoided and all individual vehicles will have equal stringency as in R51.02
  - political guidance and feedback from the monitoring might be necessary to know which coefficients can be optimized and which level of stringency is acceptable