Proposal for an amendment to ECE/TRANS/WP.29/GRPE/2013/6

Submitted by the chairman of the informal working group on Retrofit Emission Control devices (REC)

The text reproduced below was prepared by the chairman of the informal working group on Retrofit Emission Control devices (REC) as a result of the discussion of the informal group on retrofit emission control devices (REC) regarding a proposal for a new Regulation on REC.

Modifications to the original text of ECE/TRANS/WP.29/GRPE/2013/6 are marked in track changes.

I. Proposal

Paragraph 8.2.3., delete:

"8.2.3. In the case of an engine where no more stringent category is defined in Regulation No. 49 or No. 96 (as appropriate) the requirements of paragraph 8.3. shall be applied."

Paragraph 8.4.2., amend to read:

"8.4.2. For a Class II REC, the NO\textsubscript{2} incremental increase shall not be more than \([30\%][20\%]\) per-cent age points greater than the level recorded when no REC is fitted (baseline). As an example, if baseline NO\textsubscript{2} is 10 per cent of NO\textsubscript{X}, the maximum permitted NO\textsubscript{2} emission with the REC is \([40\%][30\%]\) per-cent of NO\textsubscript{X} measured as defined in Annex 5."

Annex 8, amend to read:
**Annex 8**

**Test sequences**

1. **Test sequence for particulate reduction REC**

   ![Test sequence diagram]

   **Test of a particulate reduction REC (Class I or II REC)**

   - **Start**
   - **1000h Durability testing Paragraph 9**
   - **Engine baseline emissions; Annex 5, 2.1**
   - **REC requiring a reagent or additive?**
     - **YES** Specific requirements for REC requiring a reagent or additive Paragraph 7.6 and 7.7
     - **NO**
   - **Performance requirements Paragraph 8 (REC and test engine in accordance with Paragraph 12)**
   - **Secondary emissions requirements Paragraph 8.6**
   - **Continuously regenerating**
     - **YES** Test of REC regeneration strategy; Annex 5, 4.1
     - **NO** Periodically regenerating
   - **Test of the REC regeneration characteristic; Annex 5, 4.4**
   - **Assessment criteria for periodically regenerating REC; Annex 5, 4.6**
   - **Particulate reduction REC in accordance with Paragraph 8 and Annex 5**

   **Determination of the REC Class**

   - **Class I REC**
   - **Class II REC**

   **Test of NO\textsubscript{2} emissions; Annex 5, 4.7**

   - **Determination of REC Class**
   - **NO increase in NO\textsubscript{2}**
   - **Incremental increase of NO\textsubscript{2} not more than 20\% (30\%)**
2. Test sequence for NO\textsubscript{X} reduction REC

- **Start**
  - 1000h Durability testing
  - Paragraph 9

- Engine baseline emissions; Annex 6, 2.1

- **REC requiring a reagent or additive?**
  - **YES** → Specific requirements for REC requiring a reagent or additive
  - **NO** → Performance requirements Paragraph 8 (REC and test engine in accordance with Paragraph 12)

- Secondary emissions requirements Paragraph 8.6

- Determination of NO\textsubscript{2} emissions; Annex 6, 4.2 to 4.3

- Requirements of the NO\textsubscript{X} control diagnostic system of NO\textsubscript{X} or NO\textsubscript{X} and PM reduction REC requiring a reagent; Annex 10

- NO\textsubscript{X} Reduction REC in accordance with Paragraph 8 and Annex 6
3. **Test sequence for particulate and NO\textsubscript{x} reduction REC**

![Flowchart of test sequence for particulate and NO\textsubscript{x} reduction REC]

- **Start**
- 1000h Durability testing Paragraph 9
- Engine baseline emissions; Annex 5, 2.1 / Annex 6, 2.1
- REC requiring a reagent or additive? YES Specific requirements for REC requiring a reagent or additive Paragraph 7.6 and 7.7 NO
- Performance requirements Paragraph 8 (REC and test engine in accordance with Paragraph 12)
- Secondary emissions requirements Paragraph 8.6
- Continuously regenerating Test of REC regeneration strategy; Annex 6, 4.1
- Periodically regenerating
  - Active regeneration provisions? YES Test of the REC regeneration characteristic; Annex 5, 4.4 NO
  - NO\textsubscript{2} emissions; Annex 6, 4.2 to 4.3
- Requirements of the NO\textsubscript{x} control diagnostic system of NO\textsubscript{x} or NO\textsubscript{x} and PM reduction REC requiring a reagent; Annex 10
- Particulate and NO\textsubscript{x} reduction REC in accordance with Paragraph 8 and Annex 7