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Item 6 (b) of the provisional agenda

Proposals of amendments to ATP: new proposals

Proposal to amend Annex 1, Appendix 2, paragraph 6: Replacing existing refrigerants with new refrigerants with a lower GWP

Transmitted by the Government of Germany

Summary

Executive summary:	The EU F-gas Regulation (517/2014) makes it necessary to gradually replace the refrigerants used so far with new refrigerants with a lower GWP. Since for many units a corresponding ATP type test report for the new refrigerants is not yet available, an alternative approach needs to be stipulated.
Action to be taken:	Amend Annex 1, Appendix 2, paragraph 6
Related documents:	ECE/TRANS/WP.11/2017/23

Introduction

1. The EU F-gas Regulation (517/2014) makes it necessary to gradually replace the refrigerants used so far with new refrigerants with a lower GWP.
2. According to the ATP agreement, an exchange of the original refrigerant fluid in a refrigeration unit constitutes a major change of the unit and therefore requires a corresponding ATP type test report for the new drop-in refrigerant.
3. However, for many units a corresponding ATP type test report for the new refrigerants with a lower GWP is not yet available.

4. In addition, according to the ATP agreement, a corresponding ATP type test is only applicable if the ATP type test report had been issued before the respective ATP equipment was put into service.
5. Solutions to lacking type test reports for new refrigerants with a lower GWP need to be found, in particular in view of the refrigerant R404A. Due to the EU F-gas Regulation, R404A is in short supply and its costs have increased significantly.
6. In principle, R404A can easily be replaced with R452A, which has a lower GWP since the thermodynamic properties of both refrigerants are very similar. Relevant test data is available.
7. Provided that certain conditions are met, the competent authorities should be able to verify the effectiveness of an approved drop-in refrigerant for any given unit.
8. A list of all the approved drop-in refrigerants needs to be added either to the ATP Handbook or to the ATP text itself. Adding the table to the ATP Handbook would have the advantage that new approved drop-in refrigerants can be easily added.

Proposed amendment

6. Add a new paragraph to Annex 1, Appendix 2, paragraph 6.2 and adapt the structure as follows:

6.2.1 Independent equipment

...

6.2.2 Non-independent equipment

...

- (i) Non-independent equipment, the refrigeration unit of which is powered by the engine of the vehicle

...

- (ii) Transitional provisions for non-independent equipment in service:

...

6.2.3 Replacement of the original refrigerant of a transport refrigeration unit in service by an approved drop-in refrigerant

To be able to replace the original refrigerant of a transport refrigeration unit in service by an approved drop-in refrigerant, the competent authorities shall be able to verify the effectiveness of the drop-in refrigerant in a certificate of compliance.

A certificate of compliance can be issued provided that

- (a) **the operator provides a confirmation by the manufacturer that a change to the new drop-in refrigerant can be carried out on the machine in question and**
- (b) **an ATP type test report or addendum confirming that the refrigeration unit in question can be operated with the drop-in refrigerant is available**
 - (i) **dated before the equipment entered into service or**

- (ii) dated after the equipment entered into service if a declaration by the manufacturer is available that the refrigeration unit in question is identical in design and has a comparable effective refrigerating capacity that does not differ by more than 5% compared to the above mentioned type test report or addendum.

If only an ATP type test report for the original refrigerant of the transport refrigeration unit in question but no addendum for the new drop-in refrigerant is available, a certificate of compliance can be issued provided that

- (a) the operator provides confirmation by the manufacturer that a change to the new drop-in refrigerant can be carried out on the machine in question and
- (b) a factor of 2.0 (instead of 1.75) based on the refrigerating capacities of the type test report with the original refrigerant is applied and
- (c) a pull-down test according to 6.2.1 has been carried out.

If all the necessary conditions are fulfilled,

- (i) the competent authority shall issue an ATP certificate of compliance for the equipment in question in combination with the new drop-in refrigerant. The type test report No. shall remain the same and be supplemented by a revision index that ensures that the documentation history goes back to the original type test report valid for the original refrigerant,
- (ii) the manufacturer shall change the type plate of the refrigeration unit to indicate the new drop-in refrigerant and the present charge of refrigerant.

7. Add table of approved drop-in refrigerants either

- (i) in the ATP Handbook, Annex 1, Appendix 2, paragraph 6.2 or
- (ii) in the ATP text.

Example:

Original refrigerant	Drop-in refrigerant
R404A	R452A

Impact

- Cost: The proposed amendment would have a positive economic and environmental impact.
- Feasibility: The proposed amendment can easily be implemented in ATP. A transitional period is not needed.
- Enforceability: No problems are expected.