

**Economic and Social Council**

Distr.: General  
28 July 2017  
English  
Original: French

**Economic Commission for Europe****Inland Transport Committee****Working Party on the Transport of Dangerous Goods****103rd session**

Geneva, 6-10 November 2017

Item 6 of the provisional agenda

**Interpretation of ADR****Conditions for the use of vehicles powered by electric engines that are intended for the transport of dangerous goods****Transmitted by the Government of Switzerland\****Summary*

**Executive summary:** It is necessary to decide on the conditions for the use of vehicles powered by electric engines that are intended for the transport of dangerous goods.

**Introduction**

1. To clarify whether vehicles powered by electric or hybrid engines are permitted to transport dangerous goods, it is necessary to clarify certain aspects of 9.2.2.7:

(a) To what equipment does the rated voltage limit mentioned in the first sentence of 9.2.2.7 — “The nominal voltage of the electrical system shall not exceed 25 V AC or 60 V DC” — apply? The vehicles’ engines have much higher voltages. If they were subject to the specified limit, they would be prohibited;

(b) Can the second paragraph of 9.2.2.7 be applied to vehicle engines? What are examples of electrical systems to which the text “Higher voltages are allowed in galvanically isolated parts of the electrical system ...” applies? It is difficult to conceive of a vehicle engine that would satisfy these isolation conditions;

\* In accordance with the programme of work of the Inland Transport Committee for 2016–2017 (ECE/TRANS/2016/28/Add.1 (9.1)).



(c) Does the third paragraph of 9.2.2.7, which states that systems working on a voltage higher than 1,000 V AC or 1,500 V DC shall be integrated in an enclosed housing, apply to vehicle engines? If not, that should be specified so as to allow the use of electric engines.

2. Similarly, to allow the transport of explosives using electric or hybrid vehicles, 9.2.4.4 should specify what conditions the electric engine must meet. Currently, EX/II and EX/III vehicles must have compression-ignition engines that use only liquid fuels with a flashpoint above 55 °C. This excludes the use of vehicles with electric engines. Is such a prohibition justified for safety-related reasons?

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