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**Economic Commission for Europe****Inland Transport Committee****Working Party on the Transport of Dangerous Goods****116th session**

Geneva, 5-8 November 2024

Item 4 (a) of the provisional agenda

**Proposals for amendments to annexes A and B of ADR:  
Construction and approval of vehicles****Modification of deceleration value****Transmitted by the Government of the Netherlands on behalf of the  
informal working group on electrified vehicles (IWG-EV)\*****I. Introduction**

1. For ADR 2025 a new set of provisions is introduced in Chapter 9.2 of ADR for Battery Electric and Hydrogen Fuelled Vehicles. It was decided that the IWG-EV would remain active to finish work on EX vehicles and solve issues arising from the adopted provisions.
2. It has been discovered that the value of deceleration, as a signal to close the shut-off valves of hydrogen containers in case of an accident with a Hydrogen Fuel Cell Vehicle, is too low. It is proposed to increase this value.
3. When adopted in WP.15 it is proposed to include this decision as an “interpretation” on the UNECE website to help the manufacturers in finalizing designs.

**II. Proposal**

4. Amend 9.2.4.5.3 (b) to read (new wording underlined, deleted wording stricken through):

“(b) at a deceleration of 8.0 ~~3.25~~ m.s<sup>-2</sup> ~~for 07 s~~ against the direction of travel;”

**III. Justification**

5. It is preferred to use signals that already exist. In the case for closing the hydrogen shut-off valves that was from the Event Data Recorder for heavy duty vehicles that at that time was still under development. Deceleration on trucks hitting a light object is extremely

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\* A/78/6 (Sect. 20), table 20.5.



low to start the storage of the data. In the development the value was lowered and was taken over by the IWG-EV.

6. The current value, as represented in ADR 2025, is however too low and will lead to repeated shut-off of the hydrogen supply. It is said that emergency shut-off will damage the internal membrane in the fuel cell and limits its life span. To limit shut-off to real accident situations the value of  $8.0 \text{ m.s}^{-2}$  is chosen, that limits to a deceleration that can be achieved by heavy braking. One digit behind the value is chosen to allow for a spread in practice between  $7.5 \text{ m.s}^{-2}$  and  $8.4 \text{ m.s}^{-2}$ . It is decided not to express the value as an equivalent of “G” because the G-value may vary from the position on earth between  $9.789 \text{ m.s}^{-2}$  and  $9.832 \text{ m.s}^{-2}$ .

7. The proposal supports Sustainable Development Goal 9, *Industry, Innovation and Infrastructure*, to allow for transport by renewable energy.

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