



Economic Commission for Europe**Inland Transport Committee****Working Party on the Transport of Dangerous Goods****118th session**

Geneva, 4-6 November 2025

Item 4 (a) of the provisional agenda

**Proposals for amendments to annexes A and B of ADR:
Construction and approval of vehicles****Proposals for amendments by the informal working group on
electrified vehicles****Transmitted by the Government of the Kingdom of the Netherlands on
behalf of the informal working group on electrified vehicles*****I. Introduction**

1. The informal working group on electrified vehicles (IWG-EV) remained active on a reduced level to deal with issues arising from the introduction of battery electric vehicles (BEV) and hydrogen fuelled vehicles (hydrogen fuel cell vehicles - HFCV) in ADR 2027 for AT/FL vehicles and with EX vehicles and electrified trailers. The report of the informal working group will be submitted as an informal document in due time.
2. The proposals below are for discussion and approval by the Working Party.

II. Proposals**Item 1 – External signal 9.2.4.4.1****Proposal**

3. Delete the last paragraph of 9.2.4.4.1 (deleted wording stricken through):

~~“The vehicle shall give external signals in stationary conditions, in addition to the warning the driver receives in the driver’s cab as required by 6.15.1 of UN Regulation No.1001, as amended at least by the 03-series of amendments.”~~

* A/79/6 (Sect. 20), Table 20.6

Justification

4. At its May 2025 session, the Working Party agreed on an interpretation of “Stationary conditions” in relation to the requirement in 9.2.4.4.1 for an external signal.¹ As this requirement is linked to the warning light on the dashboard required by 6.15.1 of UN Regulation No. 100, the Working Party agreed that the term “stationary” shall be interpreted as “when the vehicle is in active driving possible mode but not yet moving”. As the driver at that moment is in his seat the external signal has no additional value.

5. Concerns were expressed that in cases where while work is ongoing around the vehicle, for example unloading using a pump, or during charging at stops or overnight, no signal is currently available to warn the driver and people in the vicinity of an imminent thermal event. However, it was expressed that the trigger for such a warning was critical (from one cell in thermal runaway to full thermal propagation) as is the uniform and recognizable sound and/or visual signal.

6. It is proposed to request the World Forum for Harmonization of Vehicle Regulations (WP.29) to develop an external warning to alert about an imminent thermal event threatening the dangerous load. The signal should be unique for such an event, unambiguous and specific enough to be noticed when activities are ongoing around the vehicle and if possible, also available when the de-energizing feature is activated by the control device.

Item 2 – Battery electric vehicles for category EX/II and EX/III

Proposal

7. Delete the first sentence in 9.2.4.4 as follows (deleted wording stricken through):

~~“Electric power trains shall not be used for EX vehicles. Trailers with re-generative braking or electric power train are not allowed.”~~

8. In the table of 9.2.1.1 amend the lines for 9.2.4.4.1 to 9.2.4.4.4 to read (new crosses/wording underlined):

	<i>EX/II</i>	<i>EX/III</i>	<i>AT</i>	<i>FL</i>	
9.2.4.4.1	<u>X</u>	<u>X</u>	X	X	
9.2.4.4.2	<u>X</u>	<u>X</u>	X ⁱ	X	ⁱ <i>Applicable to motor vehicles first registered after 31 December 2026.</i> <u><i>l^v Applicable to motor vehicles with a maximum mass exceeding 4.25 tonnes.</i></u>
9.2.4.4.3	<u>X</u>	<u>X</u>		X	<u><i>l^v Applicable to motor vehicles with a maximum mass exceeding 4.25 tonnes.</i></u>
9.2.4.4.4	<u>X</u>	<u>X</u>		X	<u><i>l^v Applicable to motor vehicles with a maximum mass exceeding 4.25 tonnes.</i></u>

Justification

9. The IWG-EV decided to work together with the Energetics Working Group (EWG) of the Sub-Committee of Experts on the Transport of Dangerous Goods (TDG Sub-Committee), to benefit from its experience on the carriage of explosives substances and articles.

¹ See <https://unece.org/transport/dangerous-goods/adr-interpretation-list>

10. In July 2025, the TDG Sub-Committee endorsed the recommendation of the EWG to allow battery electric vehicles to be used for the carriage of explosive substances and articles (see ST/SG/AC.10/C.3/132, para. 17 and informal document INF.70 of the sixty-sixth session, para. 8). The IWG-EV endorsed this recommendation.

11. An exception is included, in brackets, regarding the application for light commercial vehicles. Given that the number of these vehicles used for EX/II is limited in relation to total production, manufacturers will not be urged to comply to specific demands, making the use of panel vans unlikely. Because of the higher weight of battery electric vans, discussion take place to allow heavier vehicles up to 4250 kg to be driven with a “B” driving license normally allowing to 3500 kg. The Working Party is requested to make a decision on this exemption.

Item 3 – Hydrogen fuel cell vehicles for category EX/II and EX/III

Proposal

12. Amend 9.2.4.5.1 to read (new text is underlined):

“9.2.4.5.1 Hydrogen fuel cell vehicles shall comply with the requirements for the electrical power train of 9.2.4.4. Hydrogen fuel cells shall not be used for EX vehicles.”

13. In the table of 9.2.1.1 amend the line for 9.2.4.5 to read (new crosses underlined):

	<i>EX/II</i>	<i>EX/III</i>	<i>AT</i>	<i>FL</i>
9.2.4.5 <i>Hydrogen fuel cell</i>	<u>[X]</u>	<u>[X]</u>	X	X

Justification

14. The use of hydrogen fuel cell vehicles was not yet discussed in the EWG and therefore not endorsed by the TDG Sub-Committee. It is suggested not to allow it for the time being. Gaseous fuels are banned for EX vehicles in 9.2.4.3. However, as 9.2.4.3 only deals with fuels for internal combustion engines the amendment if felt to be appropriate. Added crosses (“X”) for EX/II and EX/III remain in square brackets, for further consideration if necessary. At the May 2025 session of the Working Party crosses were added for all columns for 9.2.4.4.

Item 4 – Tyre pressure and tyre temperature monitoring system for EX vehicles

Proposal

15. Introduce the following new section 9.2.9:

“9.2.9 Tyre pressure monitoring system

Motor vehicles and trailers, shall be equipped with tyre pressure monitoring systems according to the technical requirements of UN Regulation No. 141¹⁴, as amended. [The system shall also provide information to the driver on the tyre temperature].”

16. Include a new line in the table of 9.2.1.1 to read:

	<i>EX/II</i>	<i>EX/III</i>	<i>AT</i>	<i>FL</i>	
“9.2.9 <i>Tyre pressure monitoring system</i>	<i>X^m</i>	<i>X^m</i>	<i>[X^m]</i>	<i>[X^m]</i>	<i>^m Applicable to motor vehicles and trailers first registered (or which entered into service if registration is not mandatory) after [1 July 2027].”</i>

17. Introduce a new footnote to 9.2.9 to read:

“¹⁴ UN Regulation No. 141 (Uniform provisions concerning the approval of vehicles with regard to their Tyre Pressure Monitoring System (TPMS)).”

Justification

18. Although the tyre pressure monitoring systems are not specific for BEV, the advice of the EX-subgroup of the IWG-EV is to have mandatory application of a tyre pressure monitoring system. In addition to this, a temperature measurement function was suggested to have an early indicator of binding brakes or worn wheel bearings.

19. The requirement of temperature information is kept in square brackets so that it can be verified whether systems monitoring temperature in addition to pressure are available. In Australia, tyre pressure refill systems or central tyre inflation systems are applied. These systems are also regulated by the latest amendments of UN Regulation No. 141, and it need to be decided if this extra kit and weight is justified in ADR.

20. Although no direct statistical data on reduction of tyre fires is available, positive feedback can be heard on the benefits against tyre failure in practice. In the 27 European Union ADR contracting parties, tyre pressure monitoring systems are mandatory for new vehicles. For the other 28 contracting parties this may not be the case. It should therefore be considered to make this provision applicable to other vehicles as well.

Item 5 – feature to de-energize for EX/III

Proposal

21. [In the table of 9.2.1.1, in the line for 9.2.2.8, delete the cross for EX/III.]

Justification

22. The EX-subgroup discussed that an explosive atmosphere would not be present in the normal conditions of carriage of explosives substances and articles. Only in specific cases a fuel to drive an article containing an explosive, such as a ready fuelled rocket, may contain a flammable substance if the propulsion system, developing an explosive atmosphere in case it fails.

23. On the other hand, the feature to de-energize electrical circuits would also cut out the battery management system. This system that controls the cells in the battery against malfunction is seen as an important safety item.

24. It was also felt that for the low voltage system the additional value was limited, circuits being protected by fuses. Using the feature would also prevent other electronics that nowadays control the vehicle including theft alarm and track-trace systems.

25. Although a final confirmation by the EX-subgroup is due, lifting the provision for the feature for EX/III was felt justified to be kept in square brackets for a final decision at the May 2026 session of the Working Party.

Item 6 – “stand alone” batteries to energize accessories

Proposal

26. Introduce a new 9.7.10 to read:

[“**9.7.10 Electric systems to energize accessories and other circuits with a battery other than lead-acid not galvanically connected to the vehicle re-generation or traction system**

[9.7.10.1 Electric systems and batteries to energize accessories and other circuits shall not be used for EX/III vehicles.]

9.7.10.2 Batteries with a capacity up to [1 kWh] [included in electronic devices] are exempted from the provisions 9.7.10.3 to 9.7.10.4.

- 9.7.10.3 Electric systems to energize accessories and other circuits with batteries shall meet the requirements of UN Regulation No. 100³ Part II, as amended at least by the 03 series of amendments.

[The vehicle shall give external and internal signals according to 9.2.4.4.1.]

Systems with a voltage that exceed 25 V AC or 60 V DC shall be provided with an isolation resistance monitoring system.

The system shall comply with the requirements of 9.2.4.4.2, 9.2.4.4.3 and 9.2.4.4.4 as appropriate to the vehicle category.

- 9.7.10.4 Unintended vehicle movement shall be impossible when the system or battery is externally charged, and the vehicle connector is physically connected to the vehicle inlet.

- 9.7.10.5 The electrical system of FL vehicles connected to the batteries, shall de-energize when the feature to de-energize the vehicles electrical system is activated or they shall comply with 9.2.2.9.1.”]

27. Add a new footnote 3 to read as follows:

“³ UN Regulation No. 100 (Uniform provisions concerning the approval of vehicles with regard to specific requirements of the electric power train).”

28. Introduce a new transitional measure to read:

“1.6.5.xx Vehicles first registered (or which are taken into service if registration is not mandatory) before 1 July 2027, but not in compliance with the requirements of 9.7.10 may continue to be used.”

Justification

29. In many cases batteries are added to vehicles to power accessories. In the past they were lead-acid batteries that presented no fire hazards by its chemistry. Increasingly power accessories are now equipped with lithium-ion batteries that may present fire hazards.

30. In WP.29 work is undertaken to include rechargeable electrical energy storage systems (REESS) or batteries in UN Regulation No. 100 connected to the electric power train or electric axle (E-axle) to generate electricity for accessories. Only “stand alone” batteries are left to regulate.

31. It is also felt that small batteries that power electronics present a limited fire hazard to the load and should be permitted. The exact capacity is still open to discussion, as is the inclusion in an electronic device.

32. It was suggested not to allow these batteries for EX/III tank vehicles that carry UN No. 3375. These vehicles are only available in very limited numbers.

III. Sustainable development goals

33. The provisions in this document support sustainable development goal No. 9: *Industry Innovation and Infrastructure* by allowing innovative technology to be used and No. 13: *Climate Action* to lower the carbon footprint of transport by zero and low emission solutions.