



17.10.2024

## NOTICE TO MEMBERS

**Subject: Petition No 0481/2024 by Peter Van Beelen (Dutch) on regulating the intensity of LED lighting in vehicles and public spaces in the EU**

### 1. Summary of petition

The petitioner expresses concerns about the excessive brightness of LED lighting. He notes that many people, regardless of age, are troubled by the lack of regulations on LED luminosity, particularly in car lighting. Historically, cars used low beam lights designed for human eyes, with high beams used sparingly. Now, many newer cars drive with permanent high beams, creating blinding and dangerous conditions that make it difficult to navigate traffic. Additionally, the petitioner stresses that automatic large-LED lights in cars often switch off too late, causing further issues. The petitioner questions why the EU has not imposed restrictions on LED brightness levels to ensure safer driving conditions, citing that current levels are blinding, tiring, and dangerous. According to him, the problem extends to all types of LED lights in cars, including daytime running lights and brake lights, forcing some drivers to use attenuating glasses. The petitioner also addresses the impact of LED street lighting, which often uses 6500 kelvin lights that create stark contrasts and a restless environment. Street lights, traffic lights, and roadside advertising signs often blind drivers due to their unshielded brightness. The petitioner therefore calls on the EU to regulate LED light levels in public spaces to make them safe and manageable for residents and road users.

### 2. Admissibility

Declared admissible on 10 July 2024. Information requested from Commission under Rule 233(5).

### 3. Commission reply, received on 17 October 2024

The EU has primarily regulated lighting with a focus on energy efficiency. Two lighting regulations which aim to continue improving energy efficiency in the market and cut

greenhouse gas emissions came into force on 1 September 2021 in the EU: the Commission Regulation (EU) No 2019/2020 laying down ecodesign requirements for light sources and separate control gears<sup>1</sup> and the Commission Regulation (EU) No 2019/2015 laying down energy labelling requirements of light sources<sup>2</sup>. These regulations do not impose any restrictions on the level of brightness of lights since this is a matter for consideration by the user on a case-by-case basis.

Lights on vehicles are exempt from Commission Regulations (EU) No 2019/2020 and 2019/2015 and fall under the scope of Regulation (EU) 2019/2144<sup>3</sup>. Traffic lights are also exempt from these Regulations, as road signalling.

Safety of EU citizens participating in road traffic is of a primary concern for the Commission. The vehicle lighting, which is subject to rules developed in the World Forum for Harmonization of Vehicle Regulations (WP.29) in Geneva, needs to be closely monitored, since the lighting technology, including LED technology, is continuously evolving. This is why the Commission has been actively contributing to the technical work in Geneva but also since the requirements of UN Regulations<sup>4</sup> are directly applicable in the EU vehicle type approval framework.

While technological developments in the automotive lighting aim at improving road visibility and conspicuity of traffic participants, the experts of the WP.29 recognise that technological novelties may equally engender some undesired effects. The Commission is aware that certain groups of people may experience discomfort from exposure to LED light that is rich in blue light and that some LEDs present potential concerns due to temporal light modulation (flicker) at frequencies of 100 Hz and above<sup>5</sup>.

However, these sensitivities seem to be more related to the issue of manual headlamp levelling on the vehicles, which has proven, compared to automatic levelling, to be a significantly greater cause of light dazzling. This is why, after years of extensive consultations, in which the Commission experts have been involved, and studies, which have also taken into account the human factor and behaviour, WP.29, to which the EU and its Member States are contracting parties, in March 2024 adopted an amendment of UN Regulation 48<sup>6</sup>, which will, from September 2027, amongst others, introduce mandatory automatic levelling and further tighten vertical inclination and levelling requirements for dipped-beam headlamps. The Commission is confident that this regulatory novelty will considerably limit the undesired effect of LED light dazzling.

Generally speaking, the light dazzling experience can be to a large extent attributed to the behaviour of oncoming drivers, which either forget or belatedly switch their main-beam headlamps to dipped-beam headlamps. Although the EU type approval requirements (UN

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<sup>1</sup> OJ L 315, 5.12.2019, p. 209–240, <http://data.europa.eu/eli/reg/2019/2020/oj>

<sup>2</sup> OJ L 315, 5.12.2019, p. 68–101, [http://data.europa.eu/eli/reg\\_del/2019/2015/oj](http://data.europa.eu/eli/reg_del/2019/2015/oj)

<sup>3</sup> Regulation (EU) 2019/2144 on type-approval requirements for motor vehicles and their trailers, and systems, components and separate technical units intended for such vehicles, as regards their general safety and the protection of vehicle occupants and vulnerable road users, OJ L 325, 16.12.2019, p. 1–40, <http://data.europa.eu/eli/reg/2019/2144/oj>

<sup>4</sup> [UN Regulations \(Addenda to the 1958 Agreement\) | UNECE](#)

<sup>5</sup> [scheer\\_o\\_011\\_0.pdf \(europa.eu\)](#)

<sup>6</sup> [ECE\\_TRANS\\_WP.29\\_2024\\_28e.pdf \(unece.org\)](#)

Regulations No 48, 123 and 149)<sup>7</sup> provide the conditions for adaptive front lighting systems (AFS), which regulate automatic switching between the main-beam and dipped-beam, the incidence of dazzling will remain an issue as long as we do not reach a critical mass of vehicles on the EU roads that have installed AFS, since the AFS requirements, which are not an inexpensive feature, are not mandatory and apply only to those vehicles on which AFS is fitted. In this context, the Commission will continue to support automotive research with a view to further reducing the cost of development and deployment of new technologies, including those related to vehicle lighting. Additionally, the Low Voltage Directive<sup>8</sup> (LVD) covers health and safety risks of electrical equipment (e.g. luminaires, lighting equipment, lamps, and their control gear). Finally, the brightness of street lighting is in the remit of Member States, as it is their competence to balance brightness levels and safety on the street.

### Conclusion

Regarding lighting Regulations with a focus on energy efficiency, the two Commission Regulations (EU) No 2019/2020 and 2019/2015 do not impose restrictions on the level of brightness of lights. Lights on vehicles and traffic lights are exempt from Commission Regulations (EU) No 2019/2020 and 2019/2015. The brightness of street lighting is in the remit of Member States, as it is their competence to balance brightness levels and safety on the street.

UN regulations on installation of lighting devices on vehicles have specific performance requirements as regards the brightness, colour, intensity and the height of mounting of lights. These rules have seen numerous improvements over the past few years, notably with respect to dazzling and automatic switching. The experts in Geneva will continue looking into how to further reduce the adverse effect of blue light in LEDs.

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<sup>7</sup> <https://unece.org/transport/vehicle-regulations-wp29/standards/addenda-1958-agreement-regulations-141-160>

<sup>8</sup> OJ L 96, 29.03.2014, p. 357, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014L0035>