Transmitted by the representative of France

Informal document **WP.29-166-23**
(166th WP.29, 23 - 26 June 2015,
agenda item 4.2.3)

LED HEADLAMPS
DESIGN RESTRICTIVE REQUIREMENT

Regulation ECE R48

Document ECE/TRANS/WP.29/GRE/2015/21.

Context of the current regulation.

- Installation regulation: R48

Light source	Manual levelling	Automatic leveling	Cleaning system	
Halogen Flux ≤ 2,000 Lm	Mandatory	Optional	Optional	Low beam **halogen** headlamp : Autoleveling if flux is > 2,000 Lm.
Halogen Flux > 2,000 Lm	Forbidden	Mandatory	Mandatory	
LED Flux ≤ 2,000 Lm	Forbidden	Mandatory	Optional	Low beam **LED** headlamp : Autolevelling **whatever is the luminous flux.**
LED Flux > 2,000 Lm	Forbidden	Mandatory	Mandatory	
Xenon Flux ≤ 2,000 Lm	Mandatory	Optional	Optional	Low beam **Xenon** headlamp : Autoleveling if flux is > 2,000 Lm.
Xenon Flux > 2,000Lm	Forbidden	Mandatory	Mandatory	

A practical study done on different types of vehicles (halogen, xenon, led headlamps) shows that the light source has no influence on the dazzle of the oncoming drivers. Such study was presented during 71st session of GRE.

The existing requirement of ECE R48 is based on product and not on lighting performance which would encourage the development of LED light sources new technology.

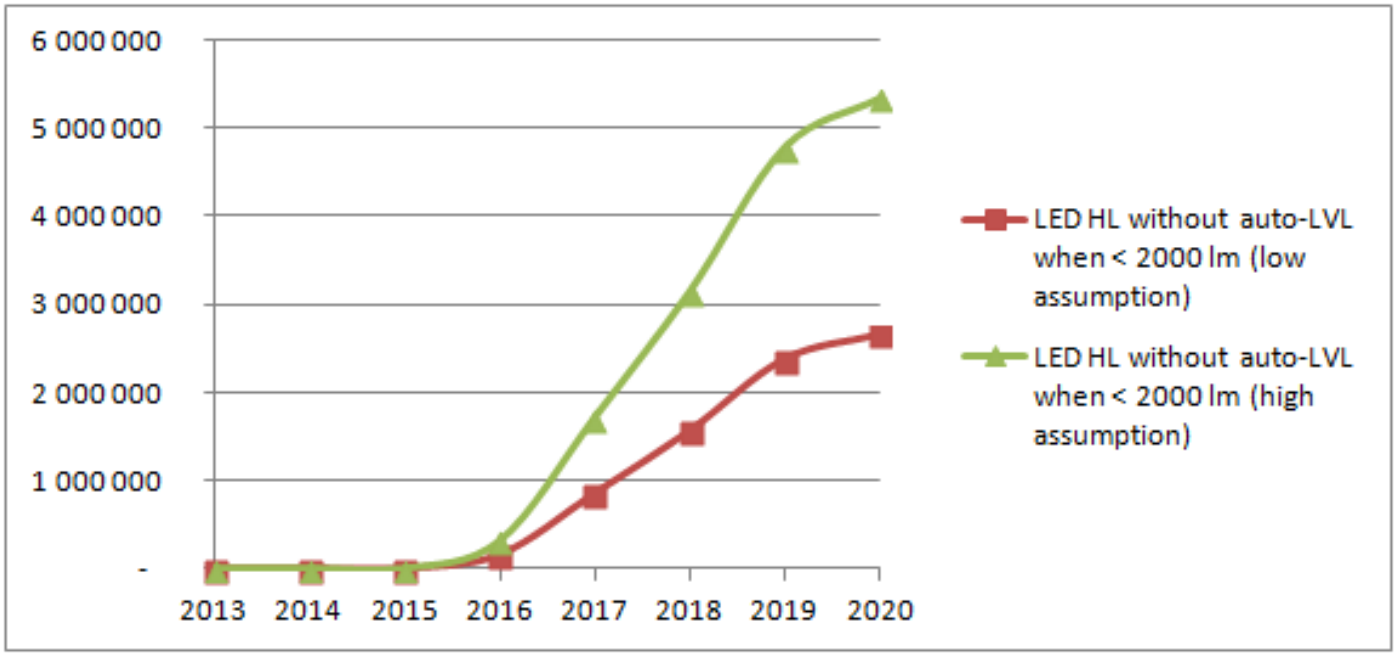
Proposal

- Document GRE/2015/21 presented by France at 72nd and 73rd session of GRE without final conclusion.
- Modify ECE R48 series 04, 05 & 06 so that prescriptions for auto-levelling devices are the same for LED headlamps as for headlamps of other types (halogen and xenon).
- Benefits of such modification will be important in terms of CO2 savings.
- Such proposal does not interfere with other subjects under examination at GRE.

Marketing study.

- Removing the auto-levelling requirement for LED headlamps whose luminous flux of the source is less than 2,000 Lm has a significant impact on the equipment rate of the vehicles.

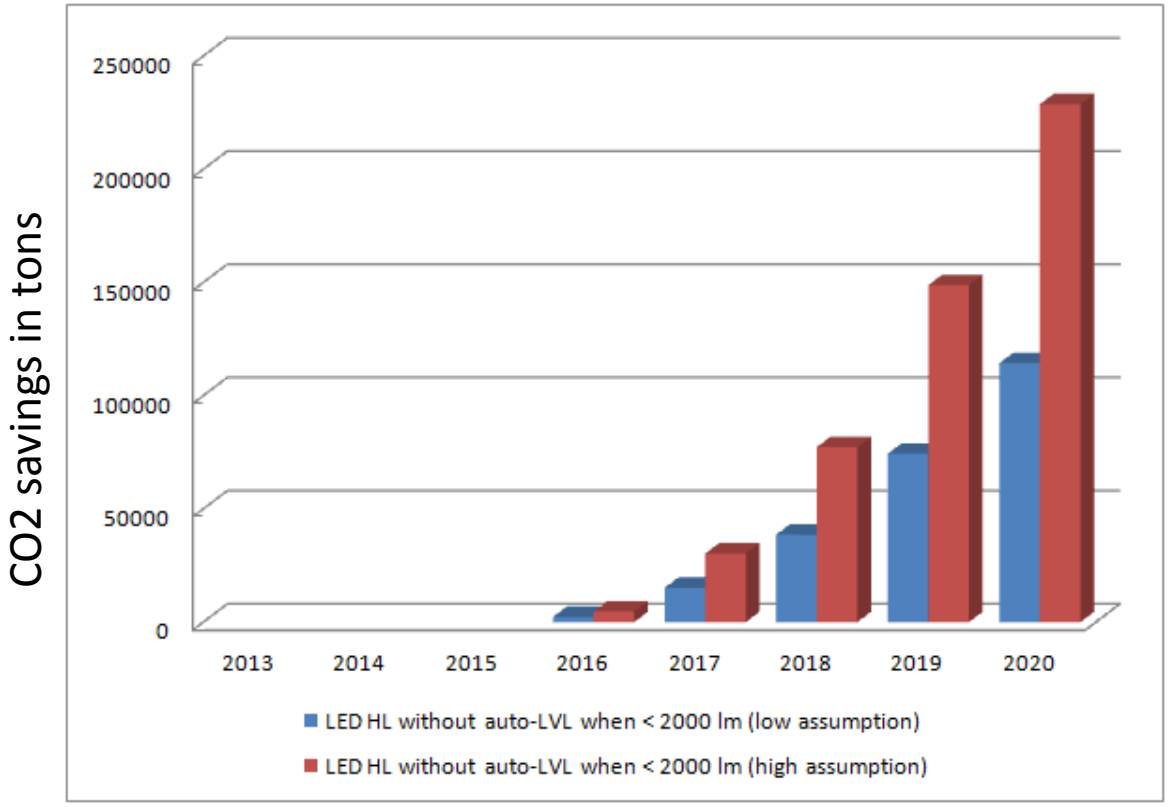
➔ in 2020, between 2.6 and 5.2M vehicles more with LED due to the proposed modification.



Impact of the proposal on the LED equipped vehicles: (Europe + Turkey)

CO_2 emissions impact

- Hypothesis:
  - LED headlamps save 1g CO_2 /km.
  - Average mileage : 15000km/year.



Between 110,000 and 220,000 tons CO2 saved per year in 2020 in Europe.

Conclusions.

- No influence of the light source type on the dazzle of other road users.
- Proposal: Same requirement upon the auto levelling for LED as for other light source types in the current R48.
- Consequences:
  - More LED headlamps fitted on new vehicles.

    ➔ reduction of CO_2 emissions.