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agenda item 9)

Transmitted by the expert from the Netherlands

# Statistics of tyre noise label values in OEM tyres

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Client: Netherlands Ministry of  
Infrastructure and Environment



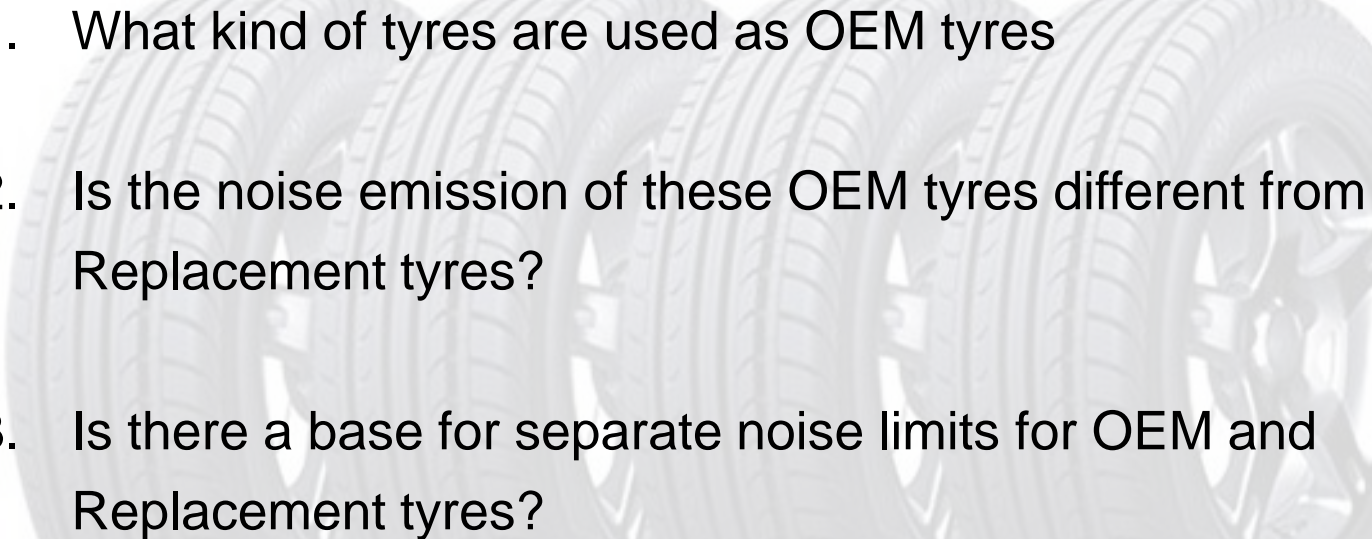


## Introduction

- Various papers in GRB60 and GRB61 on tyre performance
  - High performance tyres (“AAA”-tyres) bring significant financial benefits, both to society and to vehicle owners
  - Significant shift in sound emission between 2007 and 2013 due to 2012 limits and label
- Question during discussion: What is the difference between OEM (Original Equipment Manufacturer) tyres and replacement tyres?
- NL Ministry Infrastructure and Environment asked M+P to Investigate



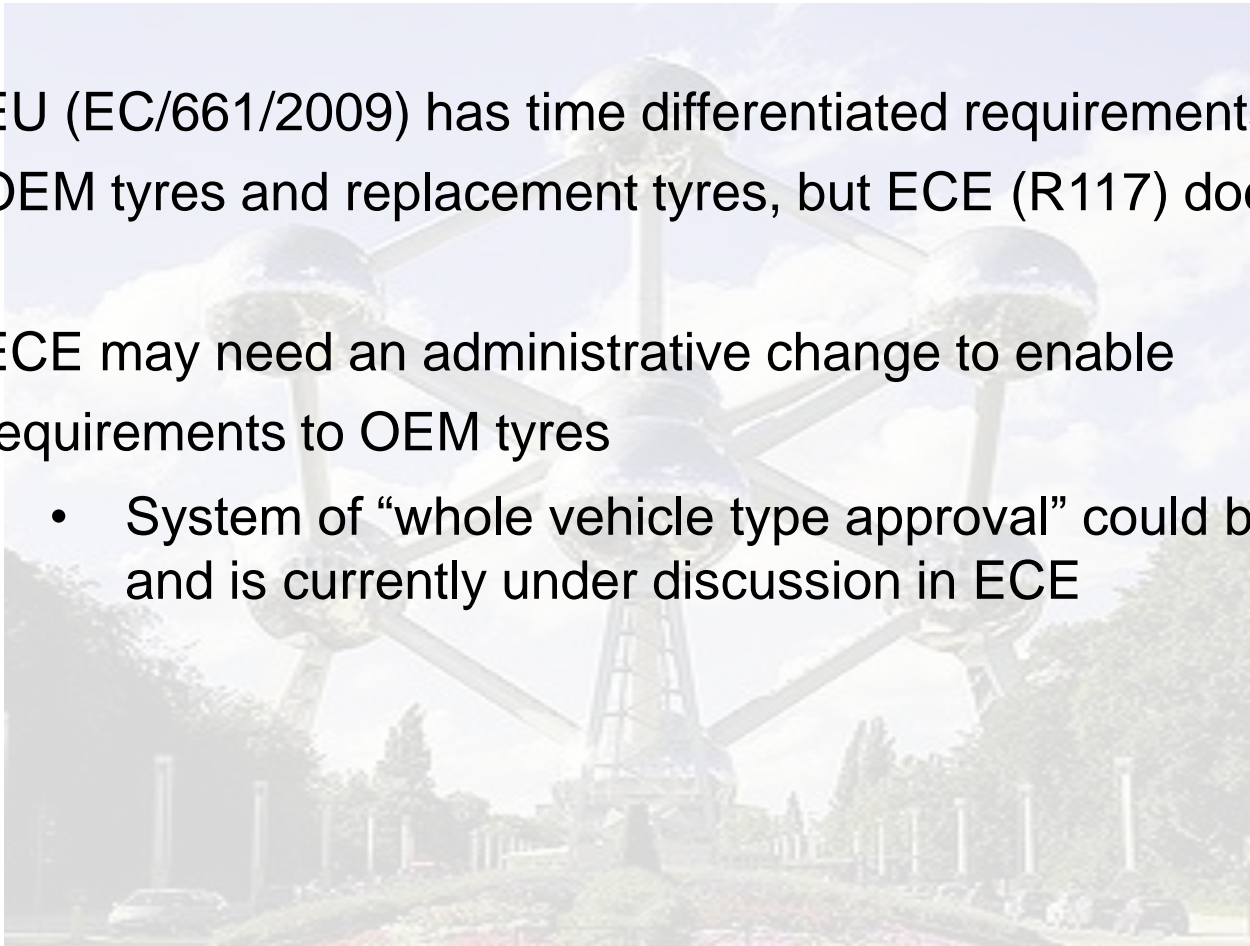
## Questions of the study

1. What kind of tyres are used as OEM tyres
  2. Is the noise emission of these OEM tyres different from Replacement tyres?
  3. Is there a base for separate noise limits for OEM and Replacement tyres?
- 



## Background information ECE vs EU

- EU (EC/661/2009) has time differentiated requirements for OEM tyres and replacement tyres, but ECE (R117) does not.
- ECE may need an administrative change to enable requirements to OEM tyres
  - System of “whole vehicle type approval” could be suited and is currently under discussion in ECE





## Work plan

- Starting points:
  - Pilot project
  - C1 only
- What tyres are used as OEM tyres?
  - Show room: ask sales people
  - Own investigation on 500 vehicles (visual inspection)
    - “new” and “young” vehicles (<2 years old)
- Is the noise emission of OEM tyres different from replacement tyres
  - Tyre labels of 500 vehicles above
  - Tyre labels of ‘Top6’ tyres versus “other tyres”
    - “Top6” brands = the 6 most popular brands

(Bridgestone, Continental, Dunlop, Goodyear, Michelin, Pirelli)



## Tyres mounted on new vehicles - interviews with sales persons

- Tyres are a low interest product
- Premium tyre brands
  - Specific tyre brand : very dependent on vehicle brand
- Standard: Summer tyres with a standard tyre size
  - Option: Bigger rims + wider tyres; Winter tyres
- Tyre label info
  - Not available for standard tyres
  - Available for optional tyres



## Tyres mounted on new / young vehicles - field research

- New vehicles in the showroom use wider tyres than young vehicles in the street (display vehicles have typically one size wider tyres)
  - Eg: 225/45R17 vs 205/55R16
- High penetration of “Top6” brand tyres
  - 74% in new vehicles in the show room
  - 91% in summer tyres in young vehicles in the street
- Mainly summer tyres;
  - Exceptions:
    - New vehicles: some 4x4 vehicles use M+S tyres
    - Young vehicles: 10% use winter or 4Season tyres (all year)



## Tyres mounted on new / young vehicles - field research

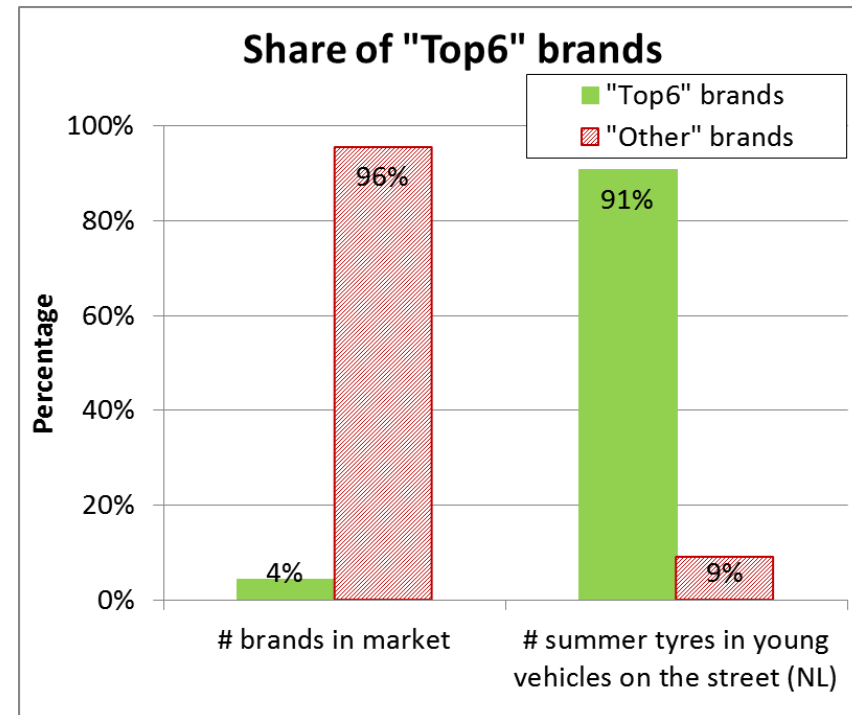
- Tyre label information was searched for these new/young vehicles
- This information seems questionable
  - Representativity en Reliability is debatable
    - Tyres of new vehicles are not well in line with tyres of young vehicles (different sizes; different brands)
    - Around 15% of tyre labels could not be traced
    - Some tyres have multiple labels
    - Some tyres on young vehicle are already replacement
    - Some tyres on young vehicles are produced more than 2 years ago and may have updated tyre labels
  - dBase with replacement tyres is not available
- Question: How to proceed?





## Tyres mounted on new / young vehicles how to proceed?

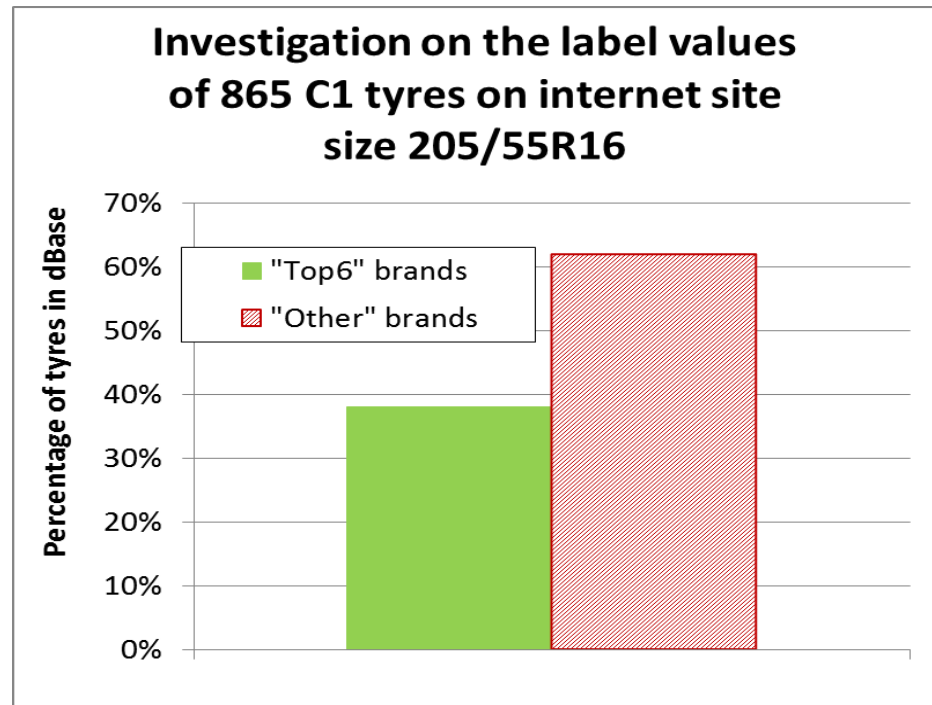
- Top 6 tyres represent 91% of summer tyres in young vehicles
- Refrase question:
  - OEM => “Top6” tyres
  - Replacement tyre => “other” tyres
- Next task: desk study
  - Difference between “Top6” tyres and “other” tyres





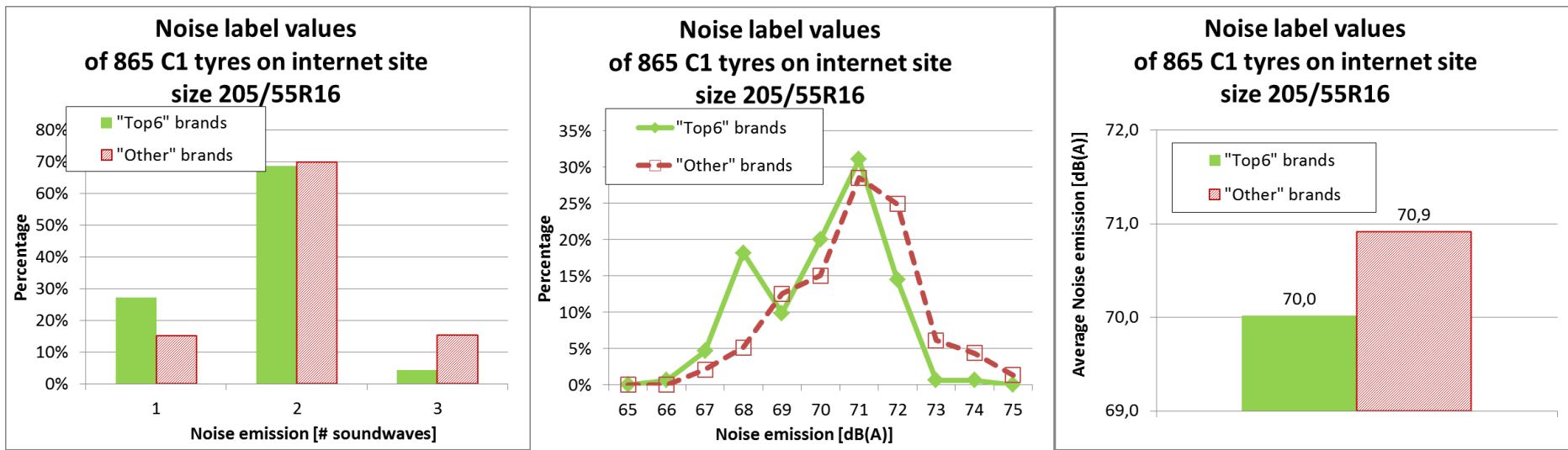
## Difference between “Top6” tyres and “other” tyres

- Set up of Desk study:
- Tyre data from tyre retail internet site
- Start with 865 C1 tyres in the size 205/55R16





# Difference between “Top6” tyres and “other” tyres

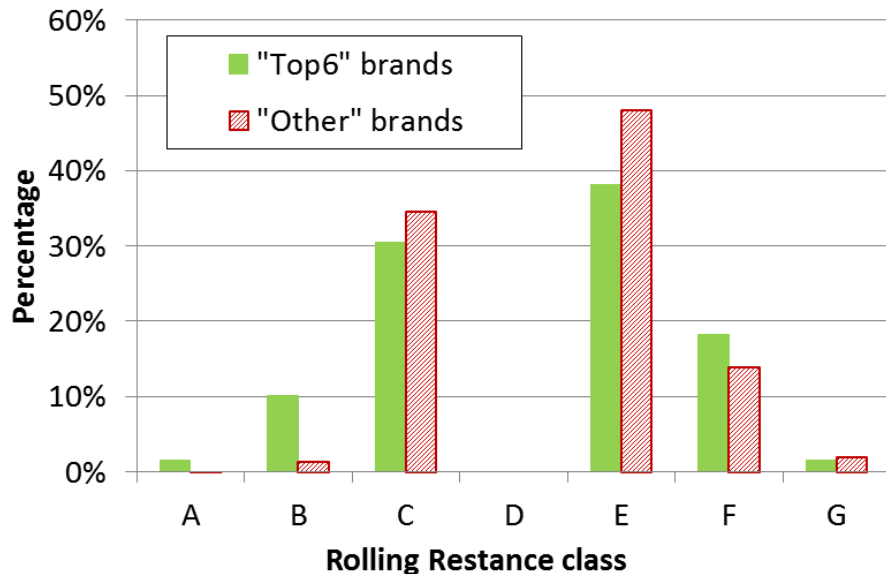


- Sound emission “Top6” tyres lower than “other” tyres:
- More low noise tyres: 27% has 1 sound wave (vs 15%)
- Less high noise tyres: 4% has 3 sound waves (vs 15%)
- Average noise emission 0,9 dB(A) lower

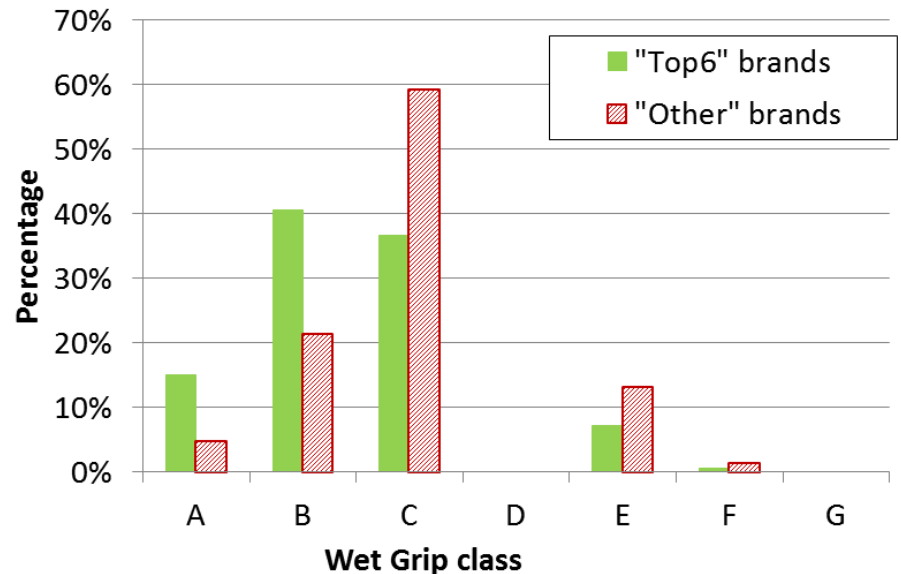


# Difference between “Top6” tyres and “other” tyres

**Rolling Resistance label values  
of 865 C1 tyres on internet site  
size 205/55R16**



**Wet Grip label values  
of 865 C1 tyres on internet site  
size 205/55R16**



- The Rolling Resistance and Wet Grip performance of “Top6” tyres is better than that of “other” tyres: (Much more A and B labels)



## Discussion and conclusions

- This is a pilot study: (C1 tyres only, zoom in to one size 205/55R16)
1. What kind of tyres are used as OEM tyres
    - Mainly summer tyres of high quality or “premium” brands
    - 91% of summer tyres in young vehicles are from “Top6” brands
  2. Is the noise emission of these OEM tyres different from Replacement tyres?
    - The average noise emission of the investigated “Top6” tyres is 0,9 dB(A) lower compared to the “other” tyres
  3. Is there a base for separate noise limits for OEM and Replacement tyres?
    - This research corroborates the separation used in EC/661/2009
    - ECE may need system of “whole vehicle type approval” first



## Discussion and conclusions

Thank you for your attention!

