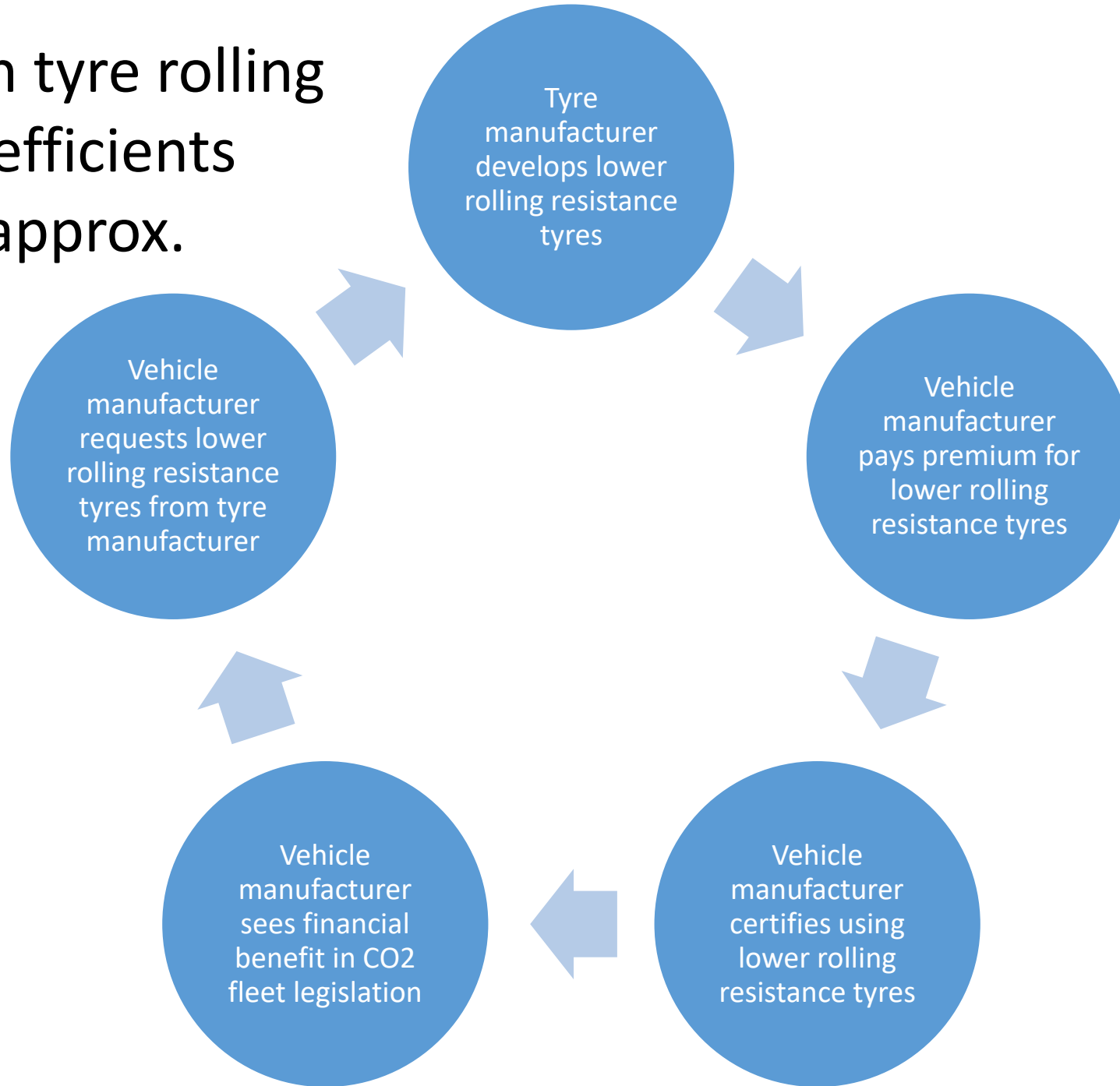


Tyre Rolling Resistance Classes in WLTP

Following much discussion, the decision was made to link the CO₂ interpolation process in WLTP legislation to the European tyre labelling bands in terms of tyre rolling resistance. This decision was based on 2 main reasonings:

- Customers will become familiar with the labelling of tyres and will be able to more easily make the link to their environmental contribution, particularly if the legislator decides to include this in customer information regarding after market tyres.
- It provides some purchasing flexibility to the vehicle manufacturer which can avoid having to recommunicate vehicle CO₂ values post order (and therefore post purchase contract)

Situation with tyre rolling resistance coefficients (RRC) above approx. 5.5.kg/tonne



Situation with tyre rolling resistance coefficients (RRC) below approx. 5.5.kg/tonne

Tyre manufacturer develops lower rolling resistance tyres

Vehicle manufacturer requests lower rolling resistance tyres from tyre manufacturer

Vehicle manufacturer pays premium for lower rolling resistance tyres

~~Vehicle manufacturer sees financial benefit in CO2 fleet legislation~~

Vehicle manufacturer certifies using lower rolling resistance tyres

Text in WLTP legislation

If the interpolation method is applied to rolling resistance, the actual rolling resistance values for the tyres fitted to the test vehicles L and H shall be used as input for the interpolation method. For an individual vehicle within an interpolation family, the RRC value for the energy efficiency class of the tyres fitted shall be used.

<i>Energy efficiency class</i>	<i>Range of RRC for C1 tyres</i>	<i>Range of RRC for C2 tyres</i>	<i>Range of RRC for C3 tyres</i>
1	RRC ≤ 6.5	RRC ≤ 5.5	RRC ≤ 4.0
2	6.5 < RRC ≤ 7.7	5.5 < RRC ≤ 6.7	4.0 < RRC ≤ 5.0
3	7.7 < RRC ≤ 9.0	6.7 < RRC ≤ 8.0	5.0 < RRC ≤ 6.0
4	9.0 < RRC ≤ 10.5	8.0 < RRC ≤ 9.2	6.0 < RRC ≤ 7.0
5	10.5 < RRC ≤ 12.0	9.2 < RRC ≤ 10.5	7.0 < RRC ≤ 8.0
6	RRC > 12.0	RRC > 10.5	RRC > 8.0

<i>Energy efficiency class</i>	<i>Value of RRC to be used for interpolation for C1 tyres</i>	<i>Value of RRC to be used for interpolation for C2 tyres</i>	<i>Value of RRC to be used for interpolation for C3 tyres</i>
1	RRC = 5.9	RRC = 4.9	RRC = 3.5
2	RRC = 7.1	RRC = 6.1	RRC = 4.5
3	RRC = 8.4	RRC = 7.4	RRC = 5.5
4	RRC = 9.8	RRC = 8.6	RRC = 6.5
5	RRC = 11.3	RRC = 9.9	RRC = 7.5
6	RRC = 12.9	RRC = 11.2	RRC = 8.5

- The effect of this is that no benefit is seen in European CO₂ fleet legislation for RRC values significantly below the range of 5.4 to 6.5 kg/t

Possible solution

- There appears to be no desire to introduce a new class of rolling resistances i.e. values lower than “A” in Europe or “1” in GTR 15
- A possible solution would be to merely set a value in keeping with the bandwidths of other RRC classes, below which tyres are no longer considered on the basis of their class mid point, rather on the basis of their absolute rolling resistances:

Energy efficiency class	Range of RRC for C1 tyres
1	5.4 < RRC ≤ 6.5

For an individual vehicle within an interpolation family, the RRC value for the energy efficiency class of the tyres fitted shall be used. **However, in the case that the RRC value is lower than 5.5 kg/tonne, the actual rolling resistance value of the tyre or any higher value up to 5.9 kg/tonne shall be used for the individual vehicle.**