



LCA of reuse bottle vs single use

Lessons from several studies

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08/02/2024

Our mission

We contribute to decision-making in a sustainable way



Our company

Created in 1992

Based in Brussels, presence in France

A team of 25 engineers and
economists



Our services



Life cycle assessment

- 500+ LCAs, in many sectors
- In-depth sensitivity analyses thanks to « Range LCA »
- Involved in the PEF



Circular economy

- Technical, environmental and economic expertise
- Whole value chain
- Assessment of public policies, Support to EPR schemes



Environmental assessment tools

- For eco-design and communication
- User-friendly and ready for non-experts
- Comply with standards



Sustainability assessment

- Integration of environmental, social and economic impacts
- Based on monetary evaluation
- Identification and quantification of externalities

- I. Introduction
- II. Key parameters
- III. Discussion



I. Introduction

Many recent LCAs on the subject

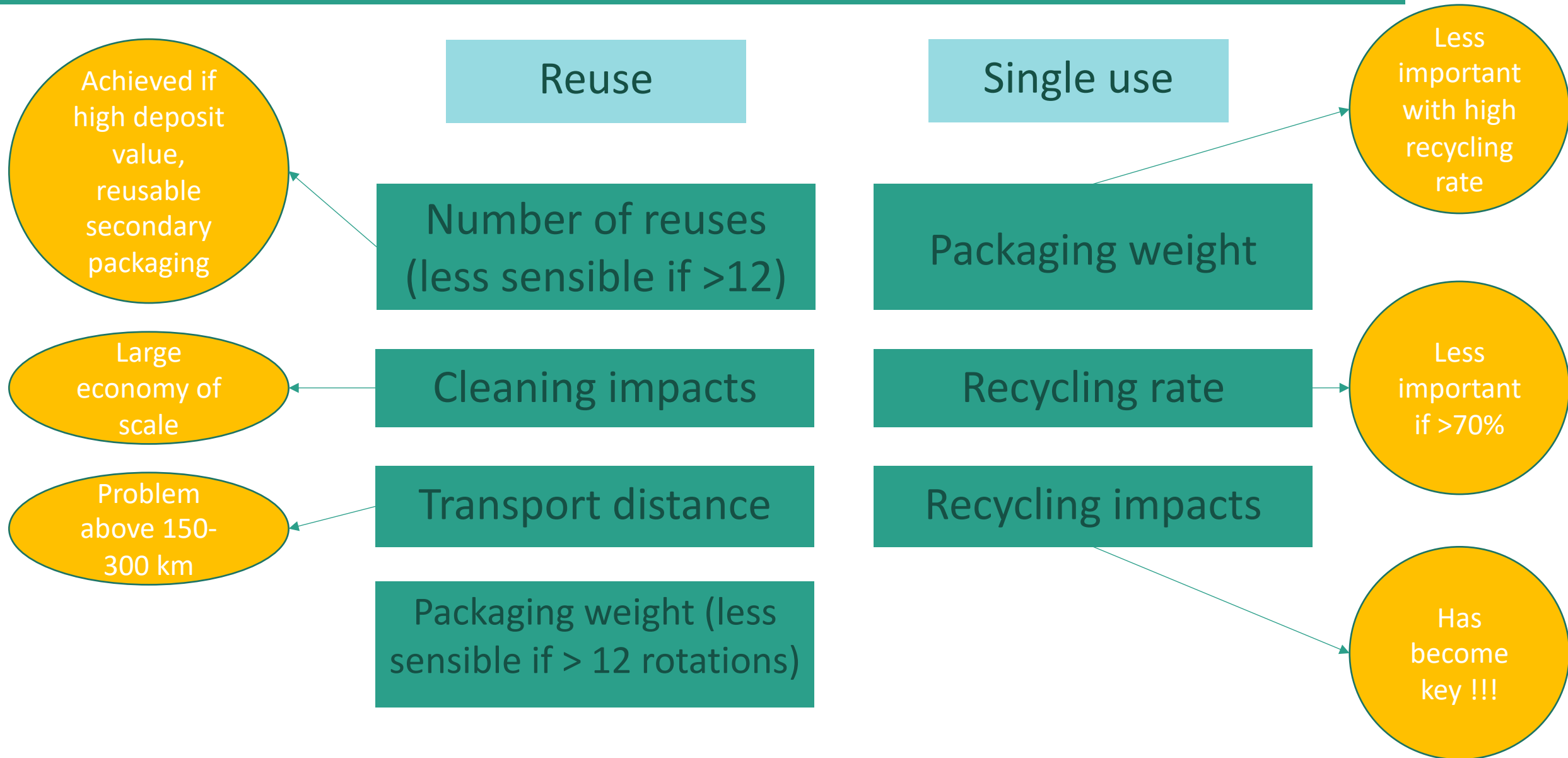
- France - ADEME
 - Reuse glass vs single use (glass, PET, Al)
 - Deposit for recycling
- European Federations
 - Reuse glass vs single use
- Belgium : deposit systems

Hot subject due to EU pressure (high recycling targets)

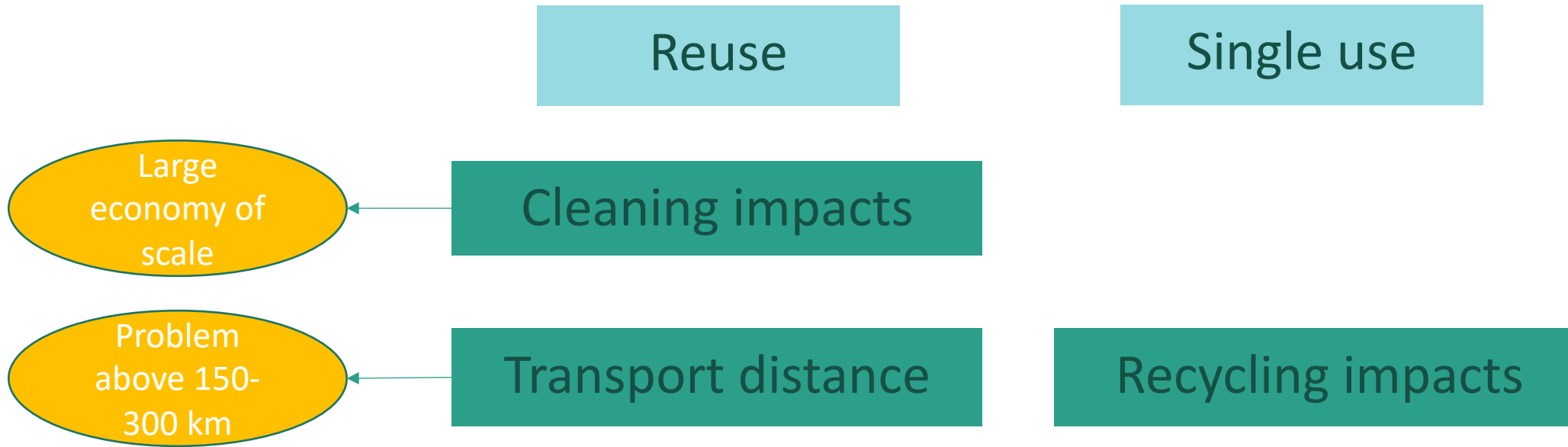
- 77% in 2025
- 90% in 2029



II. Key parameters

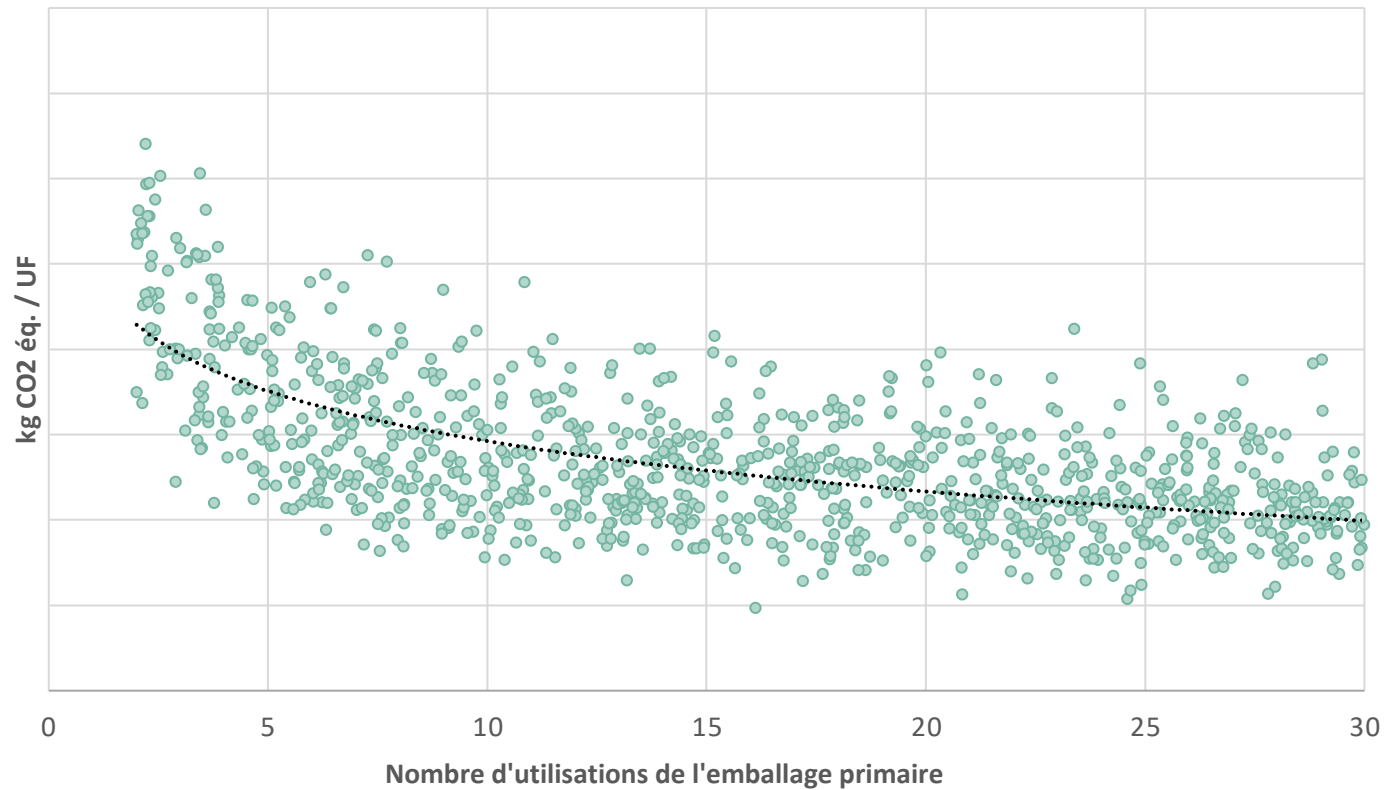


Key parameters if high reuse and recycling rates



Key parameters = recurrent impacts

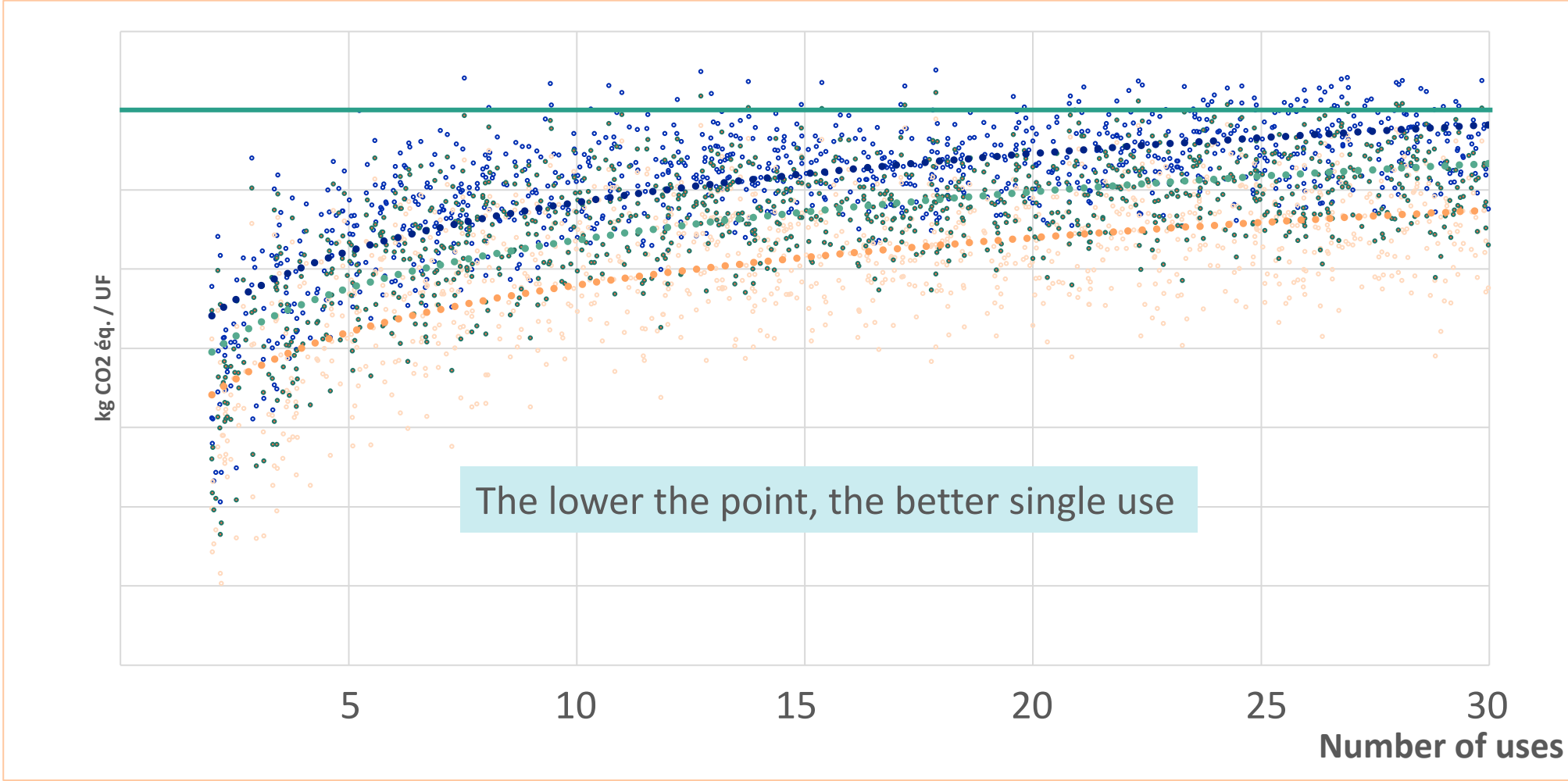
Impact of reuse glass = $f(\# \text{ uses})$



Number of uses

PET single use scores good vs. glass reuse (climate change)

R2 = 78%
R1 = 50%



50 km
300 km
600 km



III. Discussion

PET : High recycling rates required in the future → weight and recycling rate (above 77-90% anyway) become (much) less important

Key impacts will be the recurrent impacts :

- Transport
- Cleaning (reuse)
- Recycling operations

Indirect effect : If reuse is favoured, **average distances will lower** due to the high transport cost → more local products

R&D and investments are key for :

- Cleaning (efficiency, solar heating, energy recovery...)
- Recycling (solar heating, energy recovery, reactants...)



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