



**CHRISTEYNS**

LAUNDRY TECHNOLOGY

# **LIFE CYCLE ASSESSMENT OF SURGICAL DRAPES AND TAPES**

**The results**



## change<sup>®</sup> Consortium

**EUROTAPE**  
*Connecting with care*



  
**CHRISTEYNS**

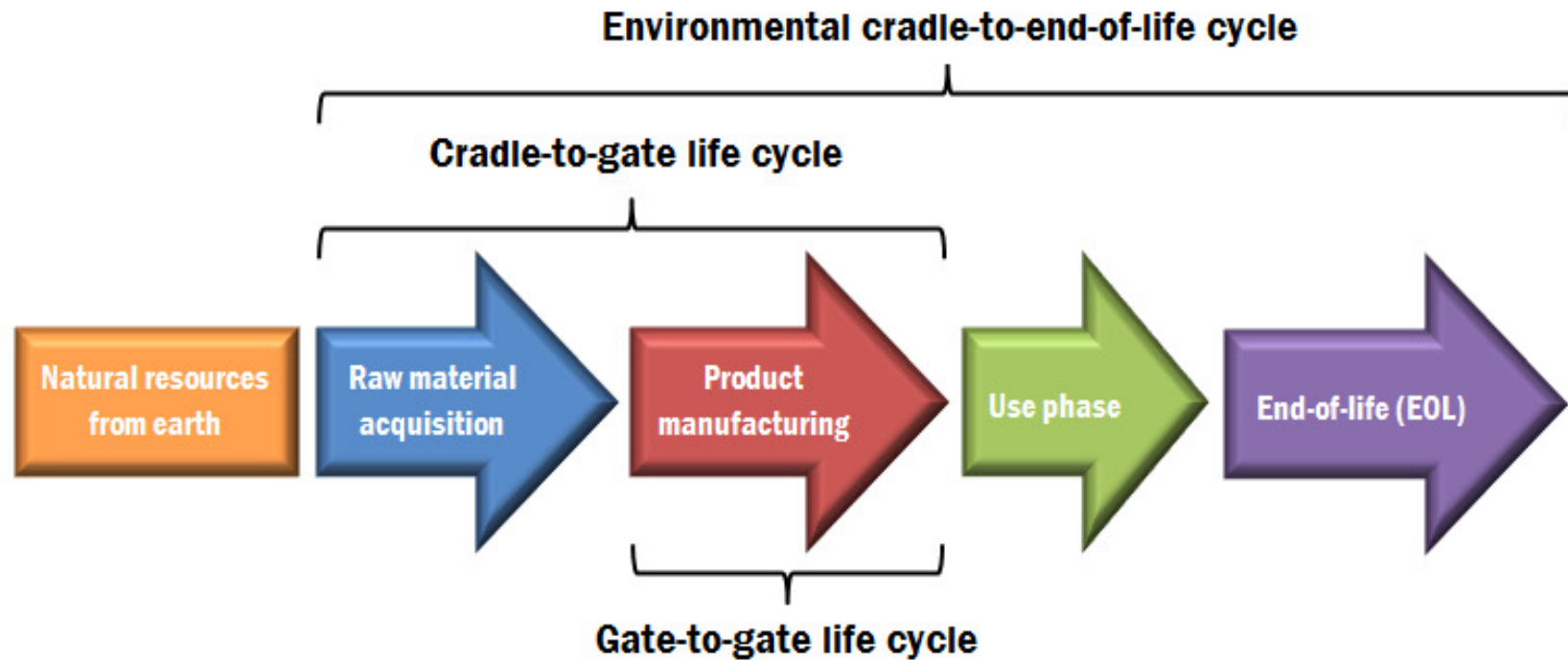


commissioned **EnvironmentalClarity**  
to perform a Life Cycle Assessment  
on reusable and disposable surgical  
drape and tape systems

# Goal of the LIFE CYCLE ASSESSMENT



To quantify and compare  
the **cradle-to-end-of-life**  
environmental impacts of  
**reusable** and **disposable**  
**surgical drape** and **tape systems**



# FINAL PURPOSE

To use the results to **build** and **promote** a **sustainable** pathway for **textiles in health care** industry.



# Life Cycle Assessment



- Parameters measured?
- Methods used?
- Results?

# Parameters measured and compared



## 3 environmental indicators

- Natural resource energy consumption
- Blue water consumption
- Solid waste generation

## 11 environmental impacts

- global warming
- acidification
- eutrophication
- ozone layer depletion
- photochemical oxidation
- fresh water aquatic ecotoxicity
- marine aquatic ecotoxicity
- terrestrial ecotoxicity
- human toxicity
- abiotic depletion of fossil fuels
- abiotic depletion

# Methods used in assessment



**14040** and **14044**  
Life Cycle Assessment: description and guidelines

CML

..... stands for .....

**Centrum Milieukunde Leiden**



# Results



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# Results : Environmental indicators

## Natural resource energy



### Life Cycle stages

Drape manufacturing + supply chain

Drape packaging + supply chain

Tape manufacturing + supply chain

Tape packaging + supply chain

Laundry

Sterilisation

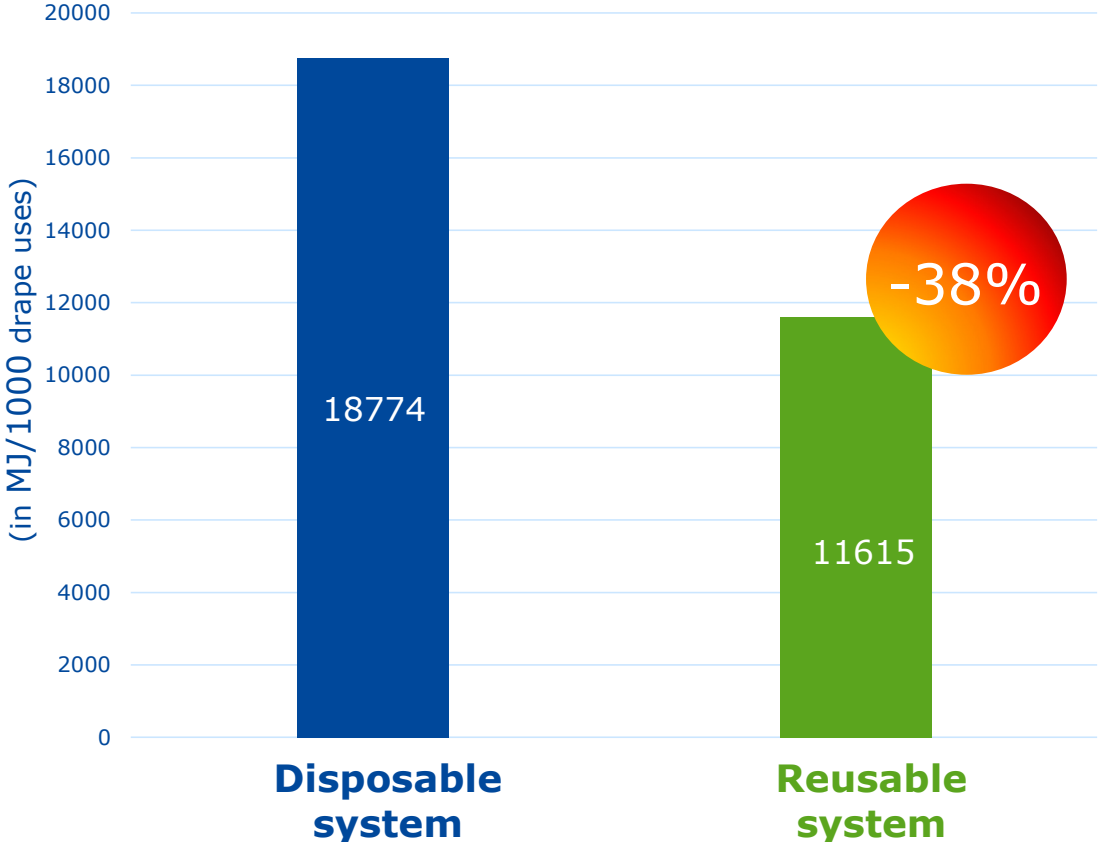
Use phase transport

End of life

# Results : Environmental indicators



## Natural resource energy



# Results : Environmental indicators

## Blue water consumption



### Life Cycle stages

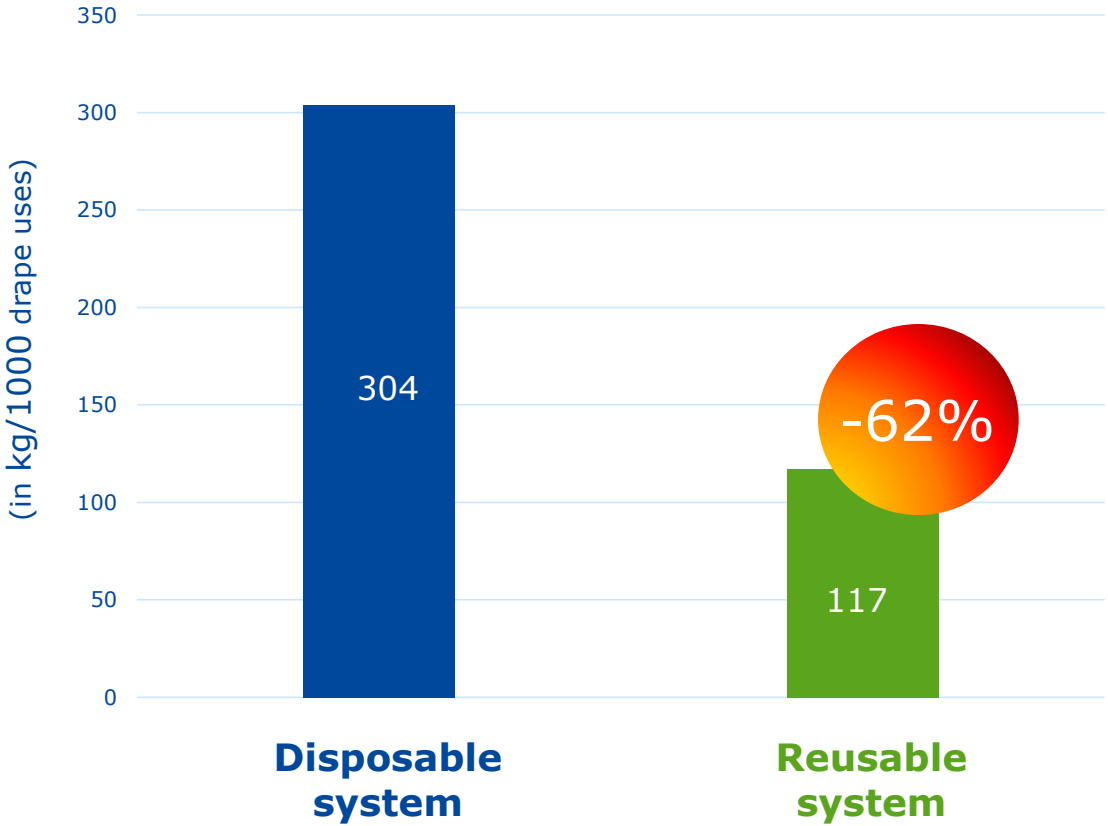
Cooling water manufacturing

Steam manufacturing

Laundry reusable drapes incl. recovered water

# Results : Environmental indicators

## Blue water consumption



# Results : Environmental indicators

## Solid waste generation



### Life Cycle stages

Drapes

Drape packaging

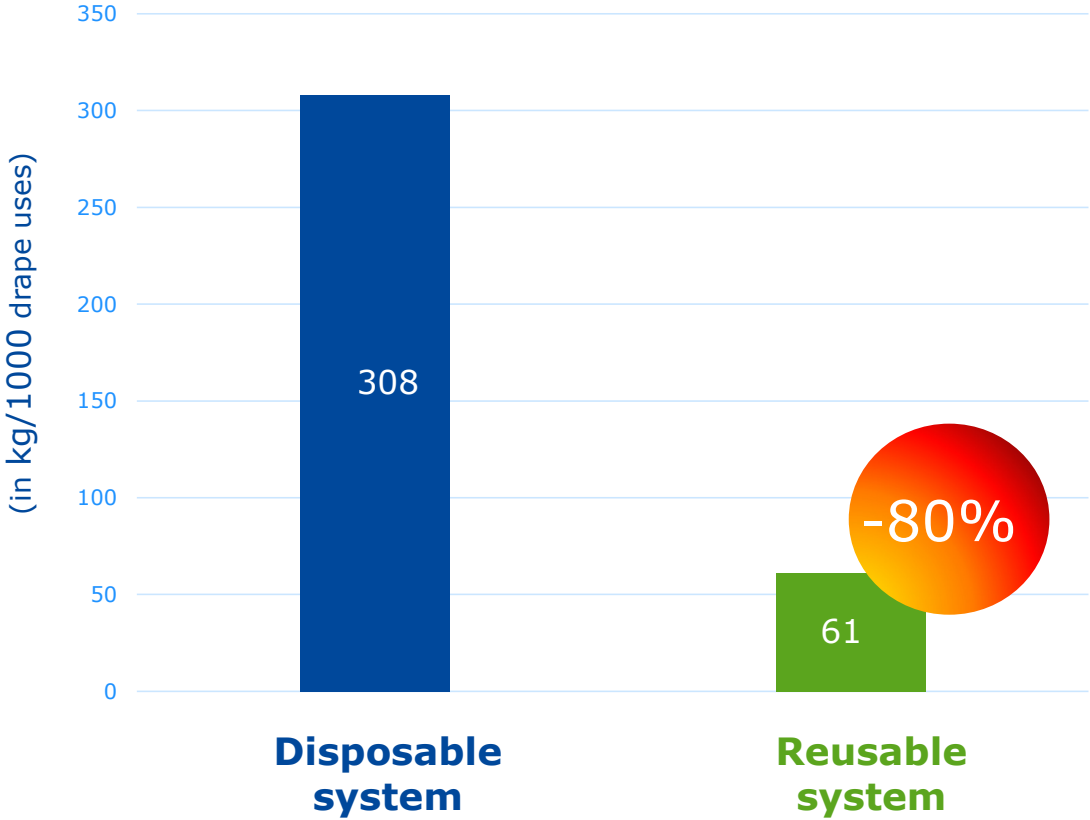
Surgical tape

Tape packaging

Biological waste on tapes

# Results : Environmental indicators

## Solid waste generation



# Results



## 3 environmental indicators

- Natural resource energy consumption
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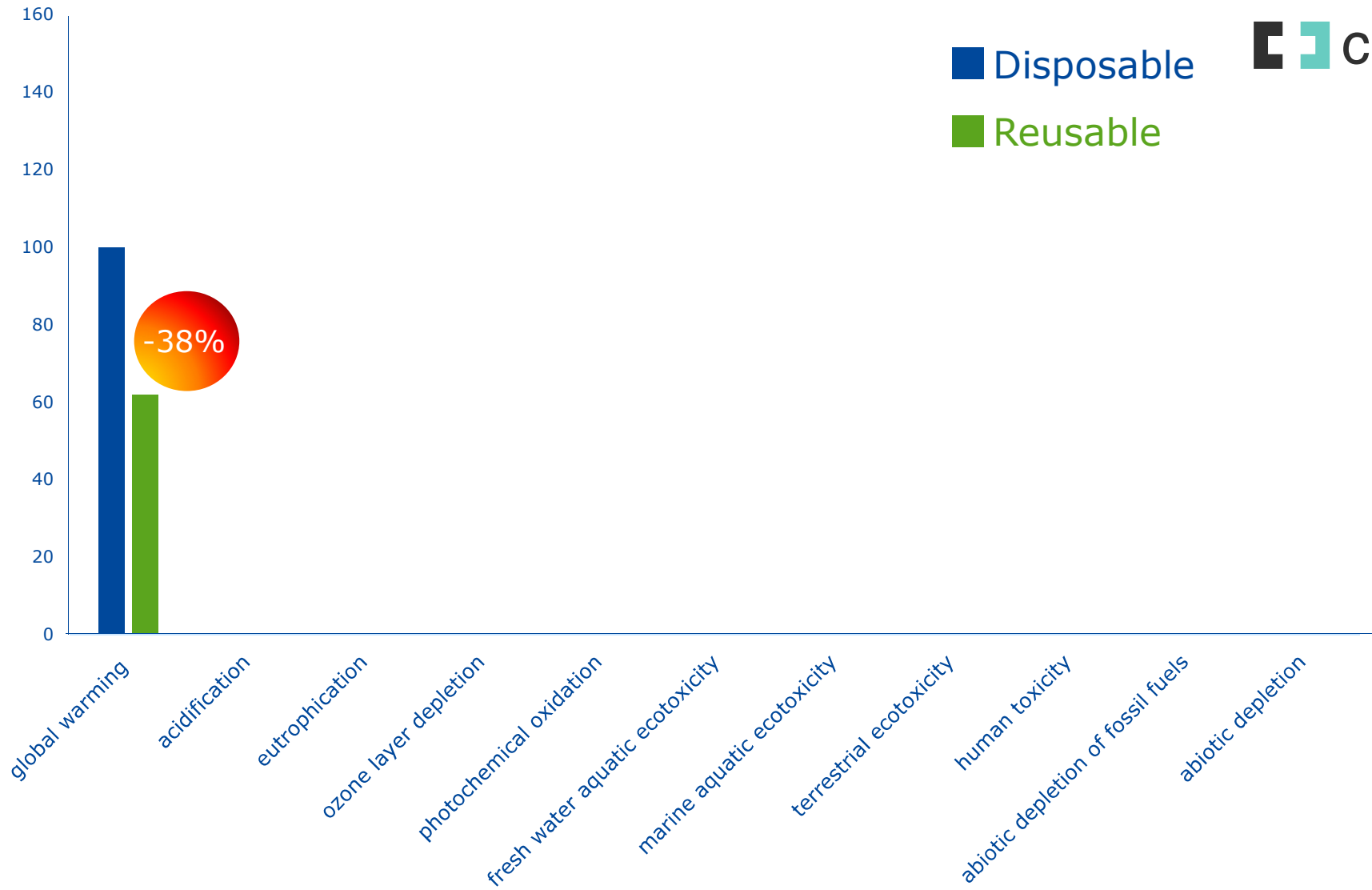
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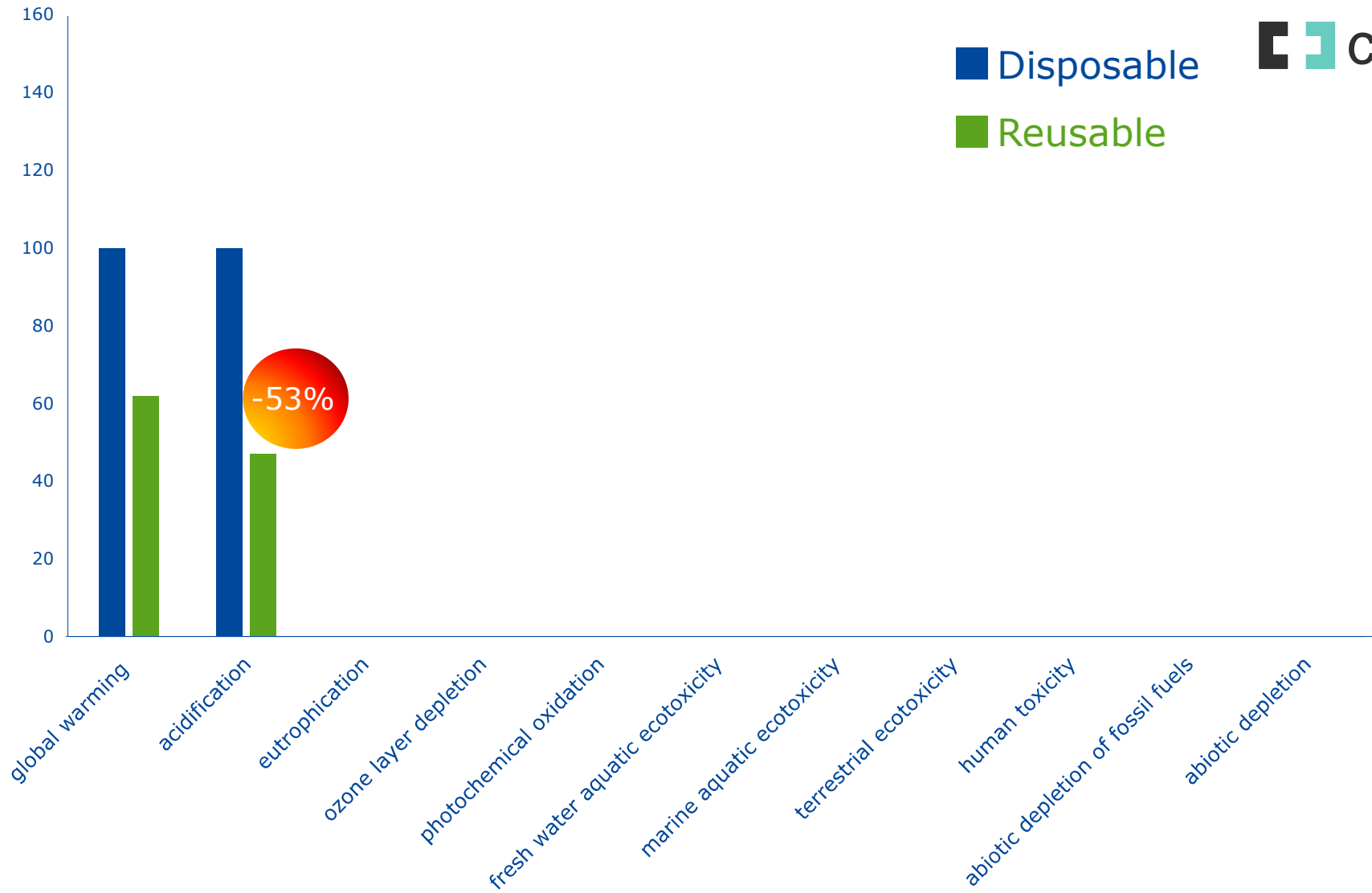
■ Disposable

■ Reusable



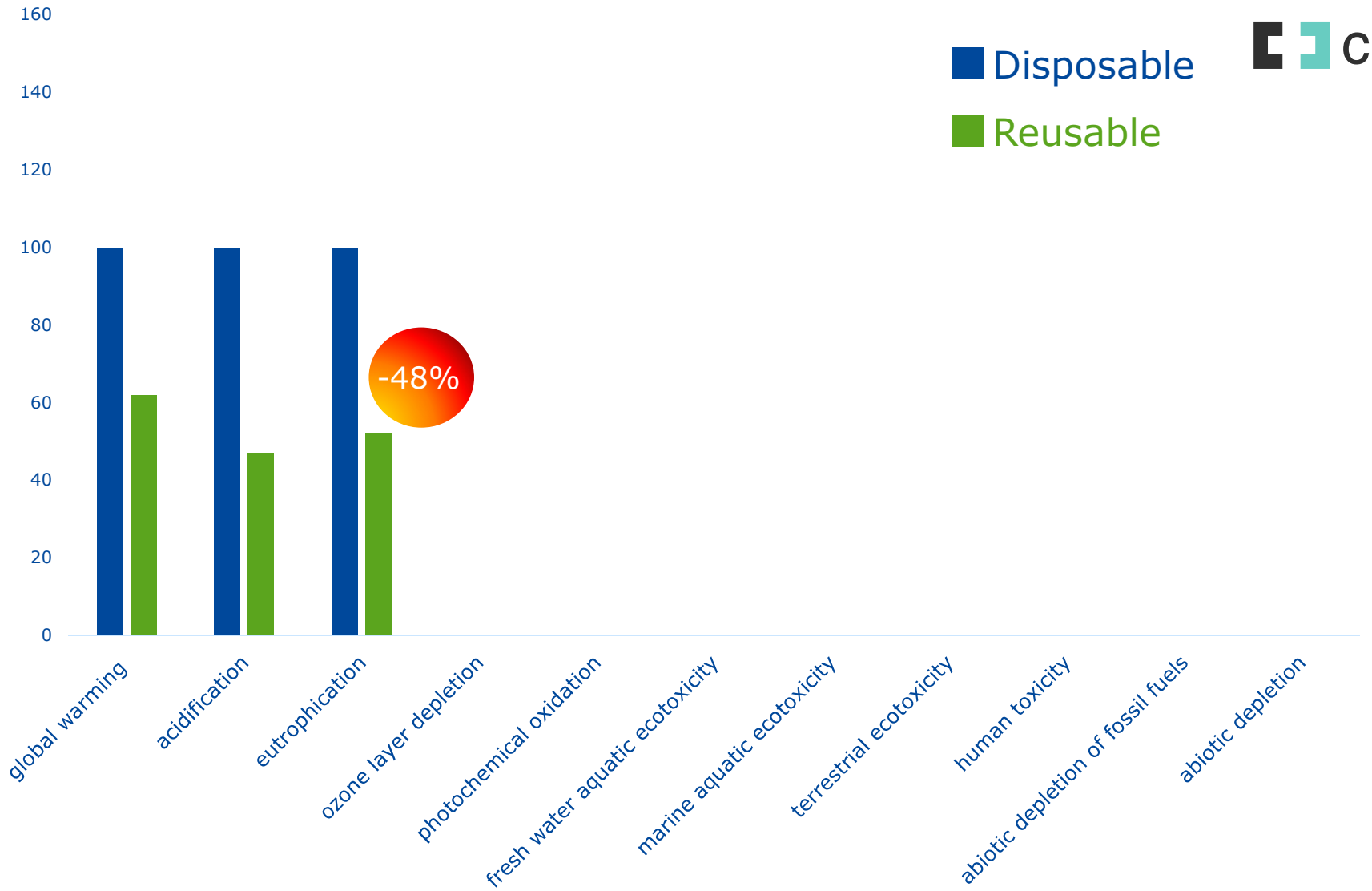
■ Disposable

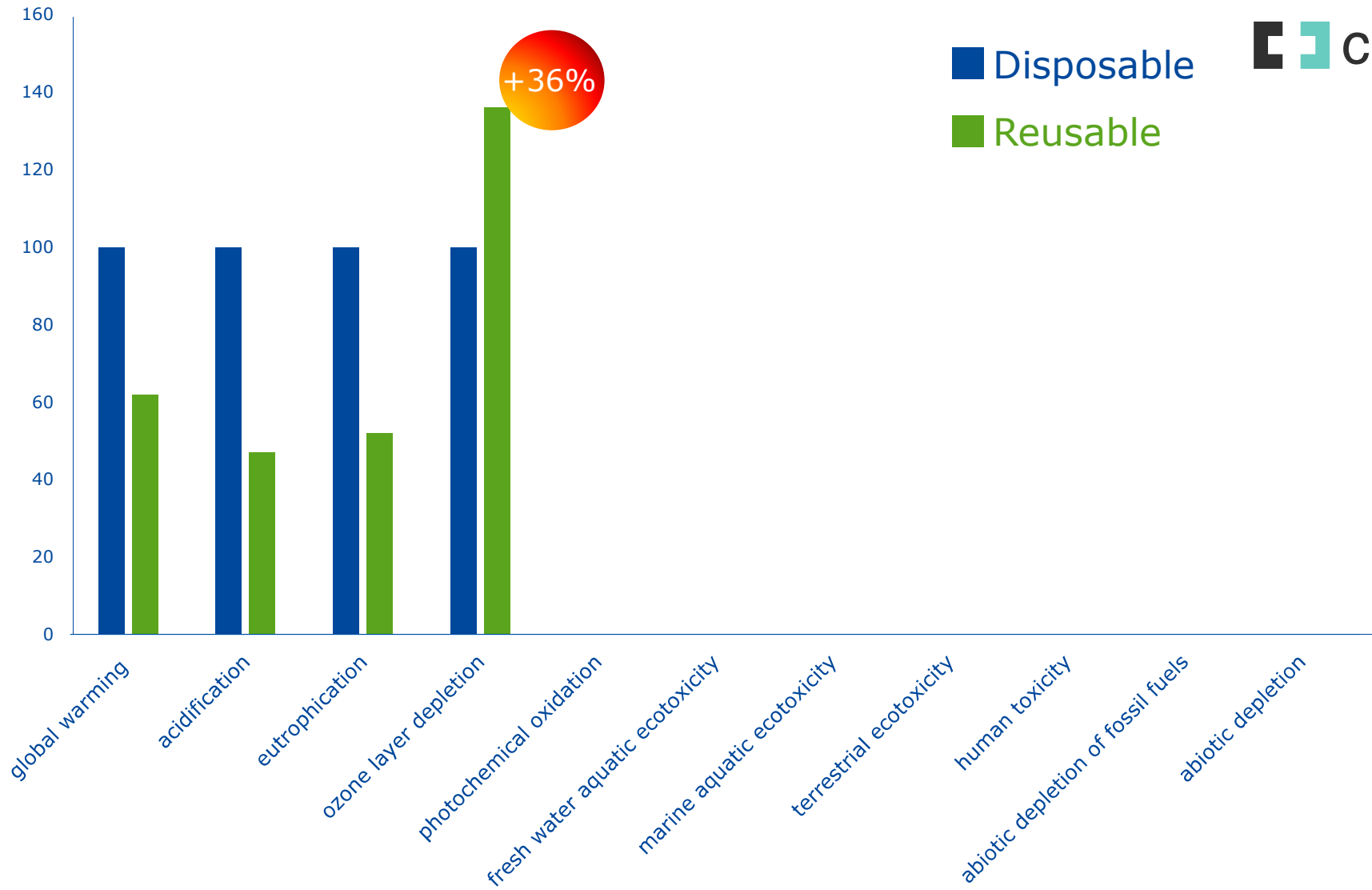
■ Reusable

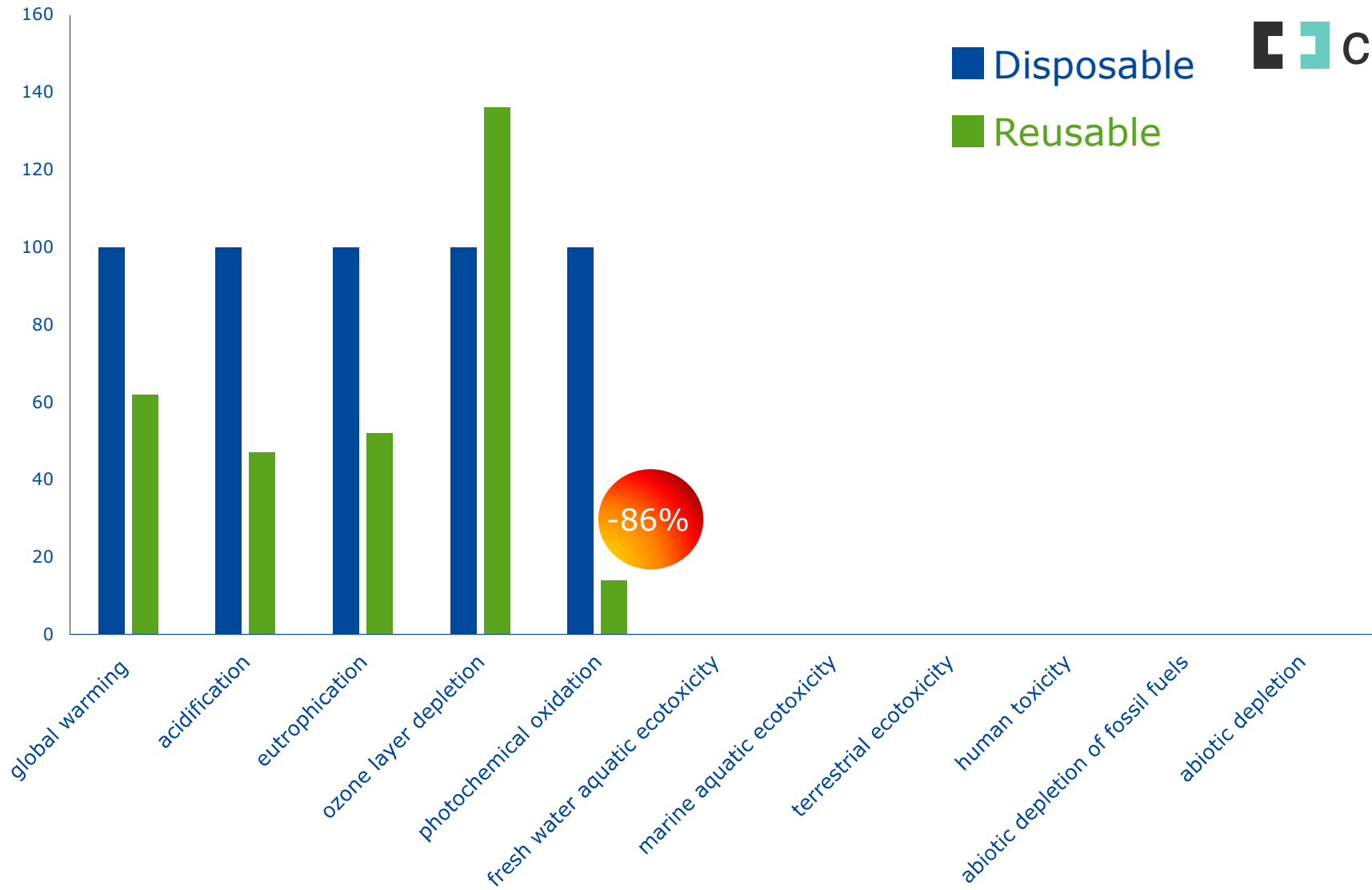


■ Disposable

■ Reusable



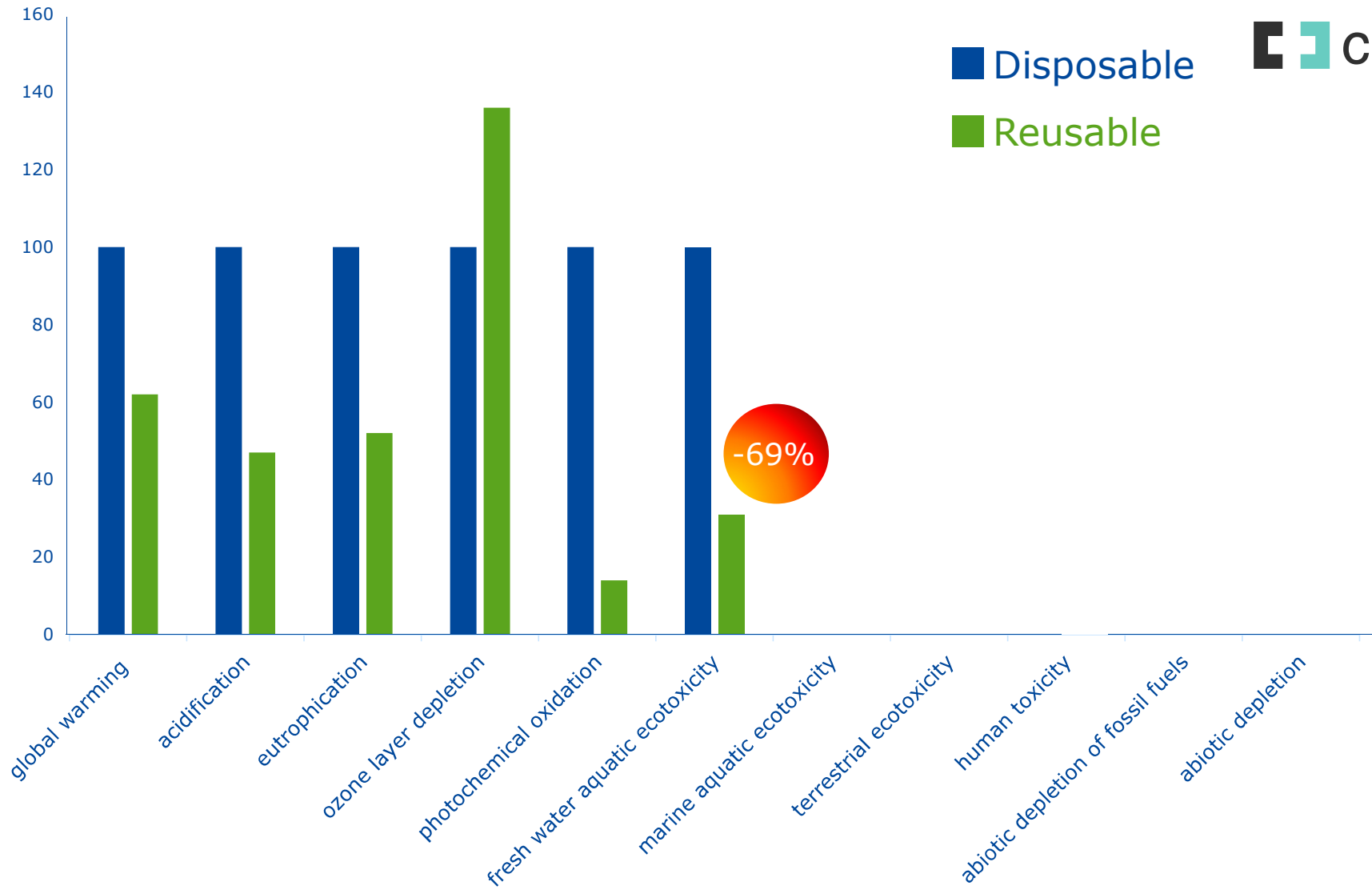




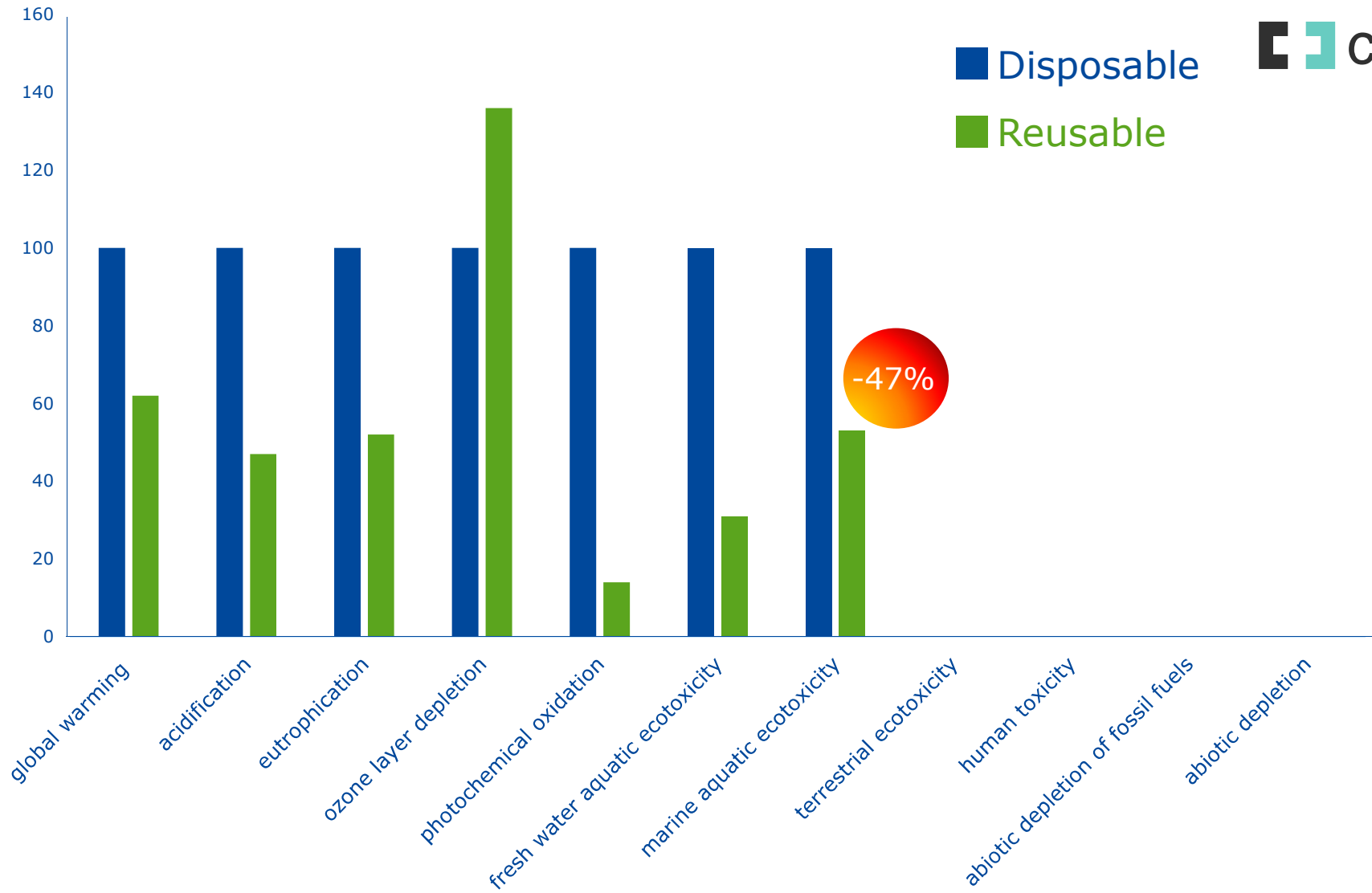
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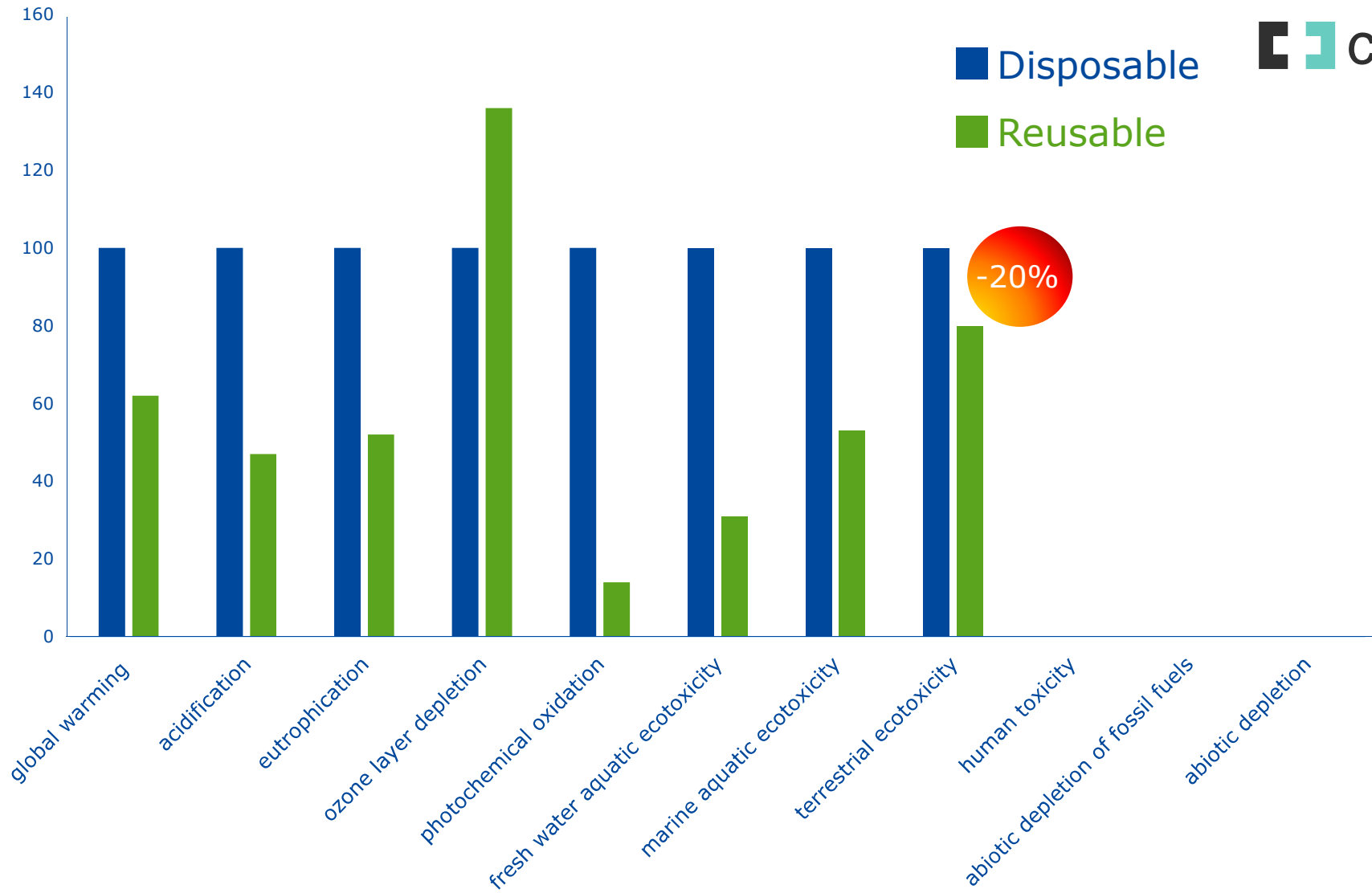
■ Disposable

■ Reusable

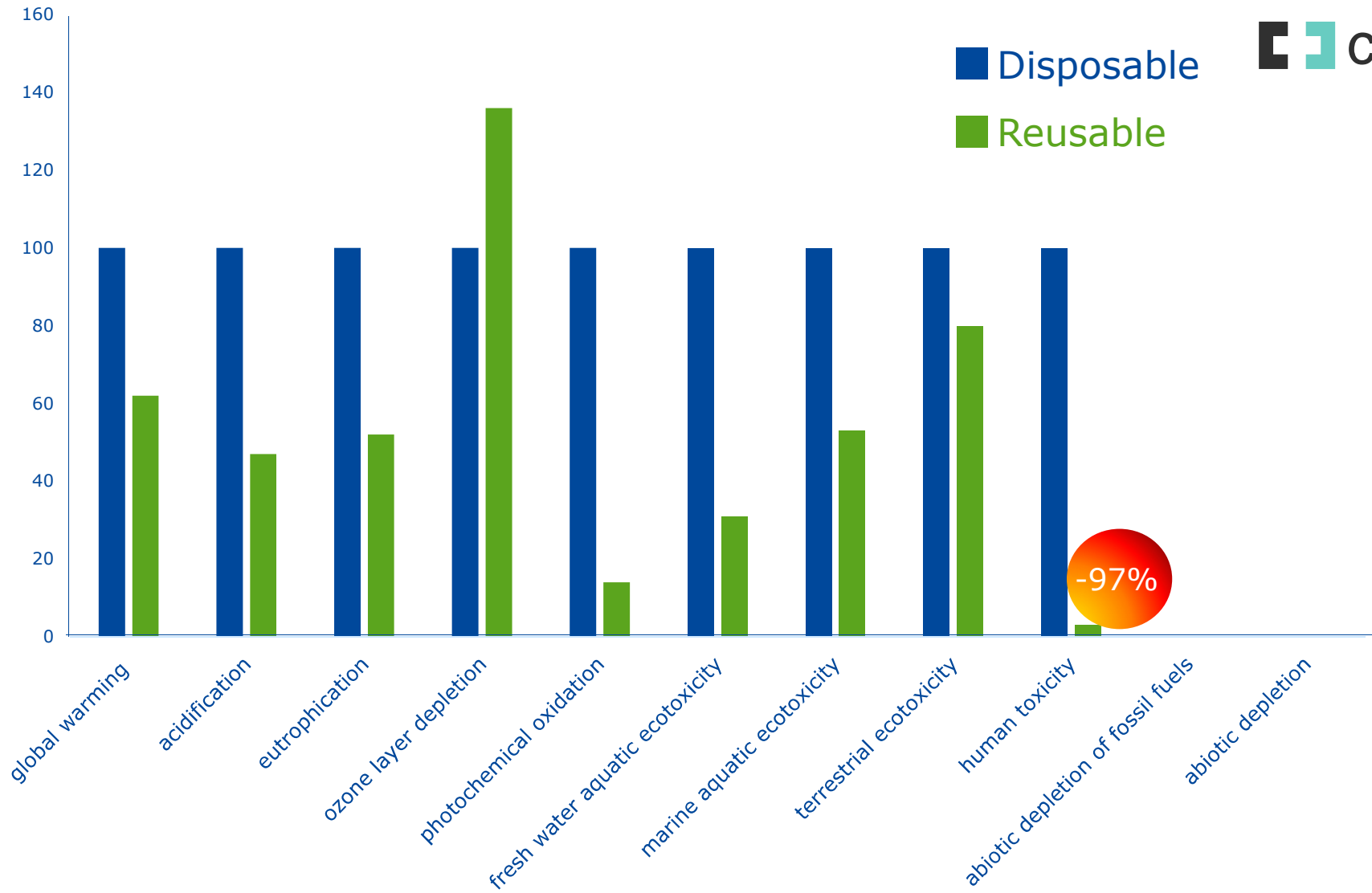


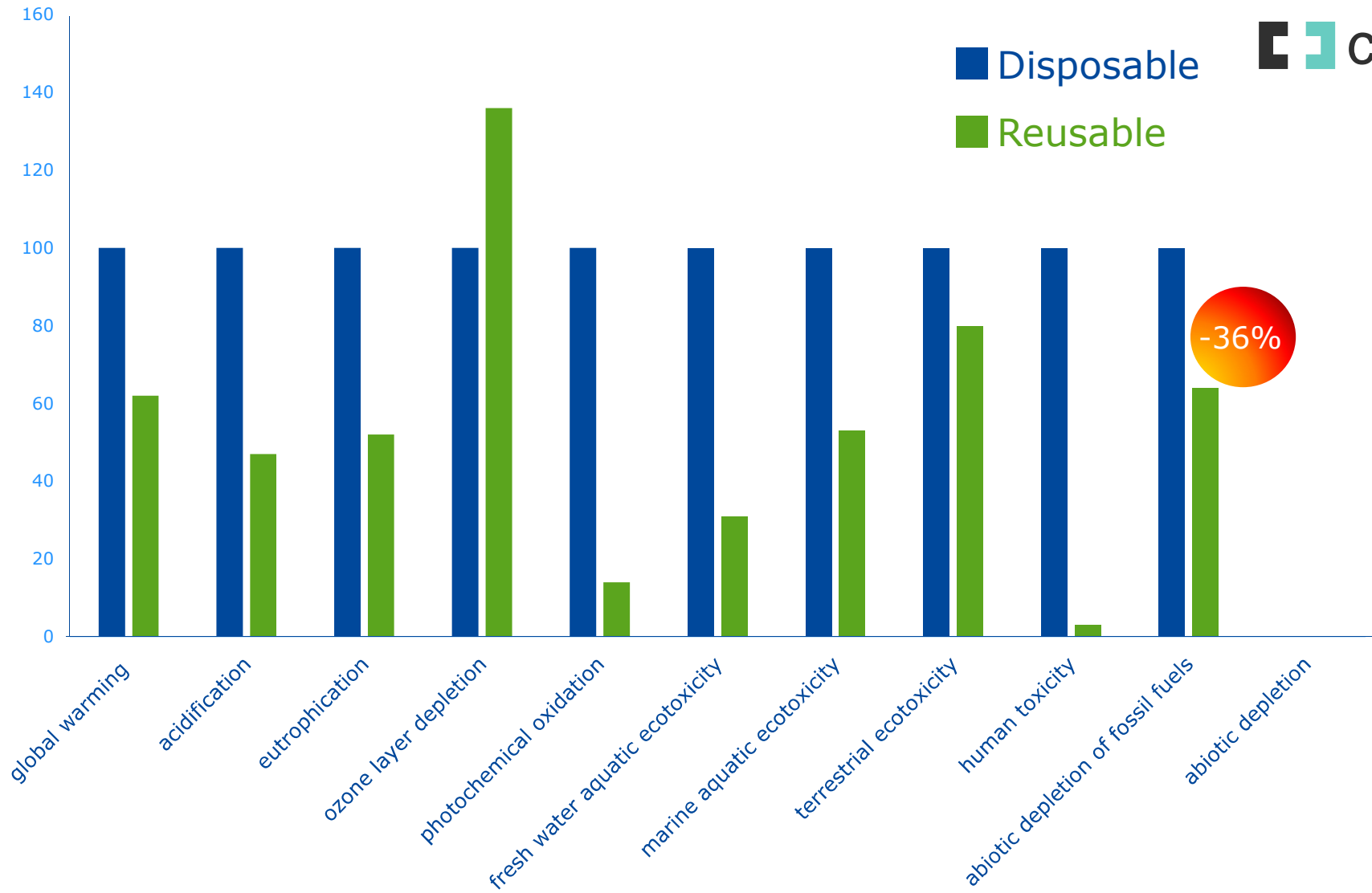
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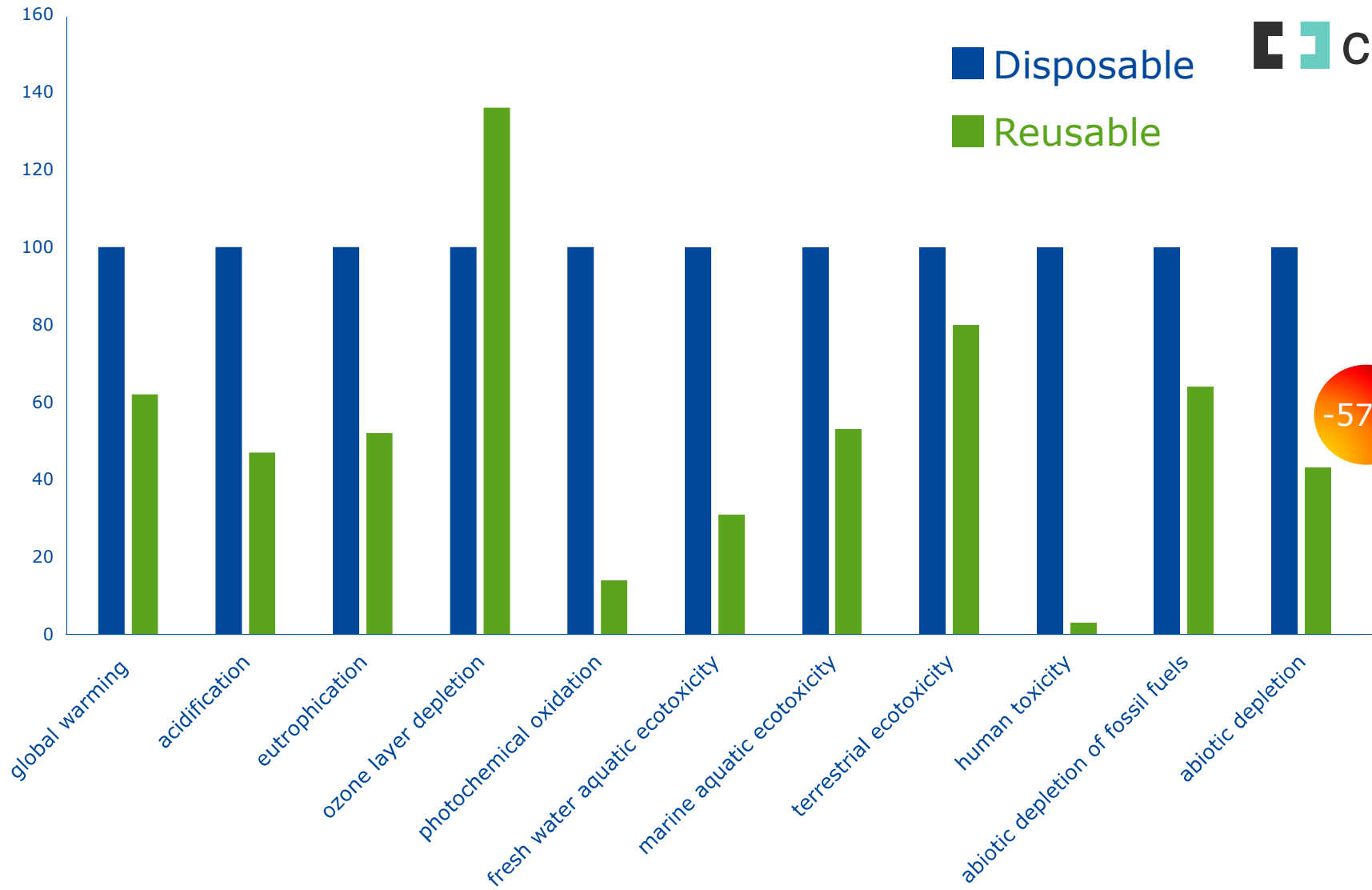








-36%



-57%

**The conclusion is very convincing...**



**Sterile, reusable woven drapes & tapes outperform disposable non-woven drapes**

**Reusable system is better in all 3 environmental indicators**

**Reusable system has a lower impact in 10 of the 11 categories**

So...

# Recommendation World Health Organization

GLOBAL GUIDELINES  
FOR THE PREVENTION OF  
SURGICAL SITE INFECTION

Use either sterile disposable, non-woven drapes or sterile, reusable woven drapes to prevent SSI \*



\* Recommendation 4.16 October 2016

**And...**



If all markets are becoming  
more sustainable,

why not the healthcare market?



**LET US GO GREEN IN THE  
OPERATION ROOM**