Carbon footprints of recycled solvents at the sectoral level

October 2018

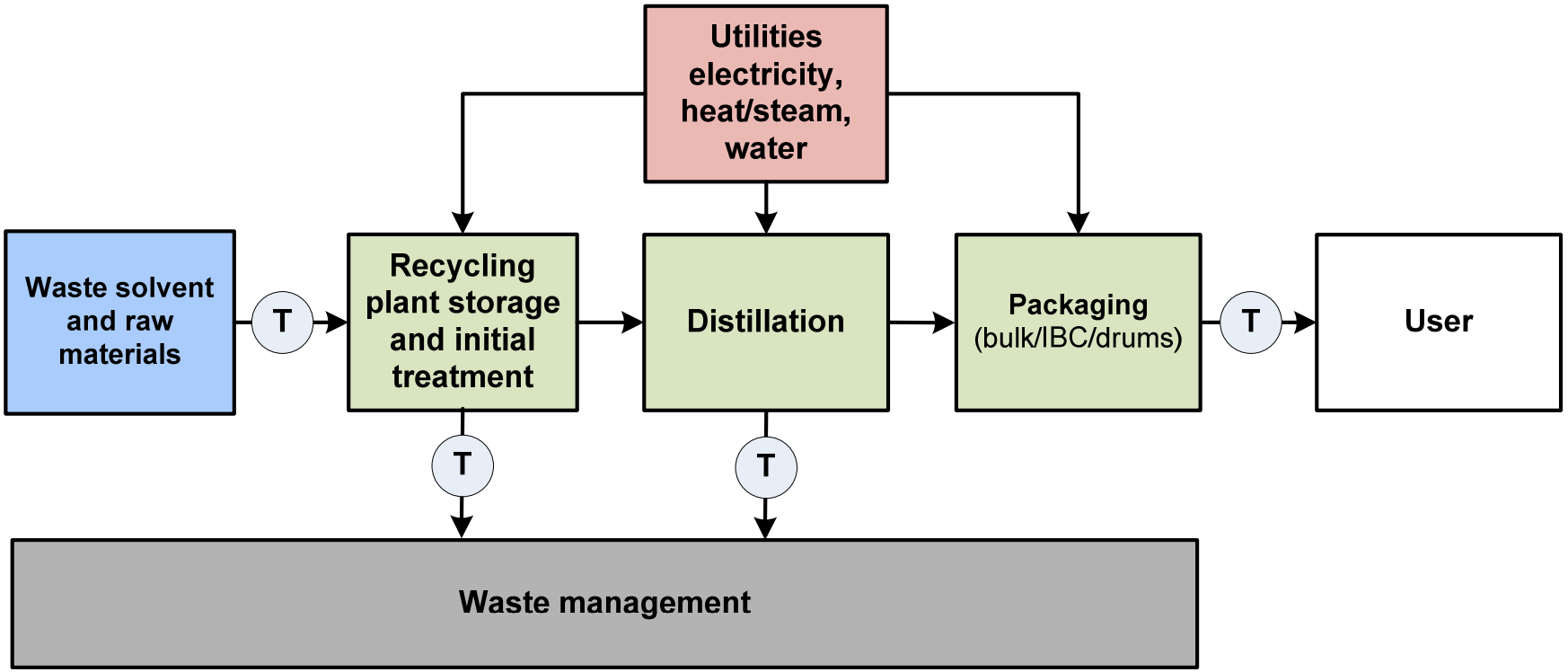
ETHOS Research
Environment · Technology · Society

Goal and scope of the study

- Goal
  - To estimate the annual carbon footprint of recycled solvents
- Scope
  - From ‘cradle to gate’ or ‘business to business’
- Unit of analysis (functional unit)
  - Annual manufacture of recycled solvents by ESRG members

ETHOS Research
Environment · Technology · Society

Scope and system boundaries



ETHOS Research
Environment · Technology · Society

Data and assumptions

- Data on annual amounts recycled provided by ESRG members

- All solvents classified into groups:
  1. Non-chlorinated, chlorinated, mixed
  2. Acetone, methyl ethyl ketone, mixed solvents (MS), perchloroethylene, triethylamine and tetrahydrofuran

- Carbon footprints of the above six solvent types used to estimate the total carbon footprint of all solvents

ETHOS Research
Environment · Technology · Society

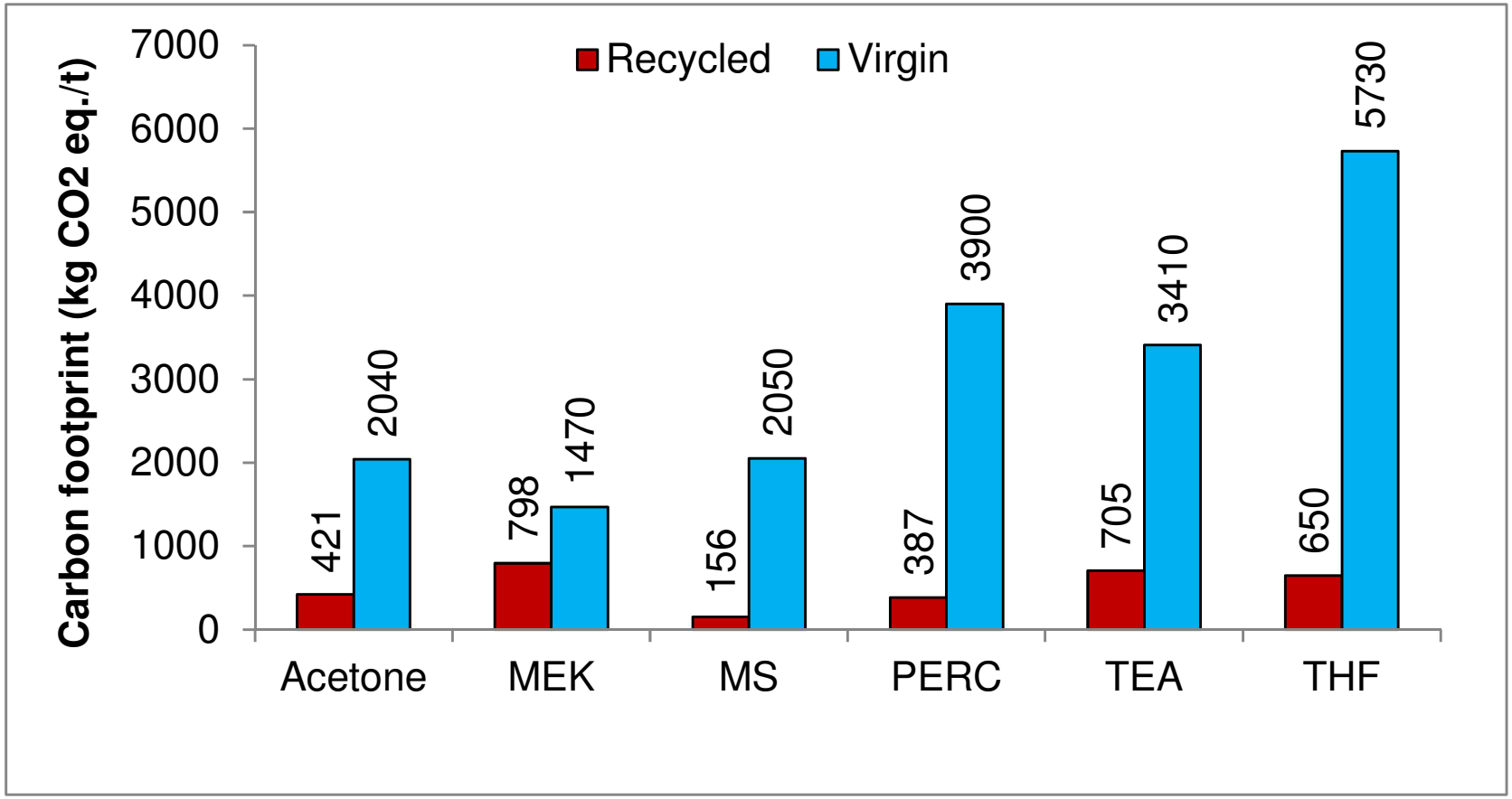
Data and assumptions

Type	Proxy[a]	Amount (t/yr)
Simple non-chlorinated	Acetone, MEK, MS, TEA, THF	142,166
Chlorinated	Perchloroethylene	10,399
Mixed solvents	Mixed solvents	156,185
Total		308,750

[a] MEK: methyl ethyl ketone; MS: mixed solvents; TEA: triethylamine; THF: tetrahydrofuran.

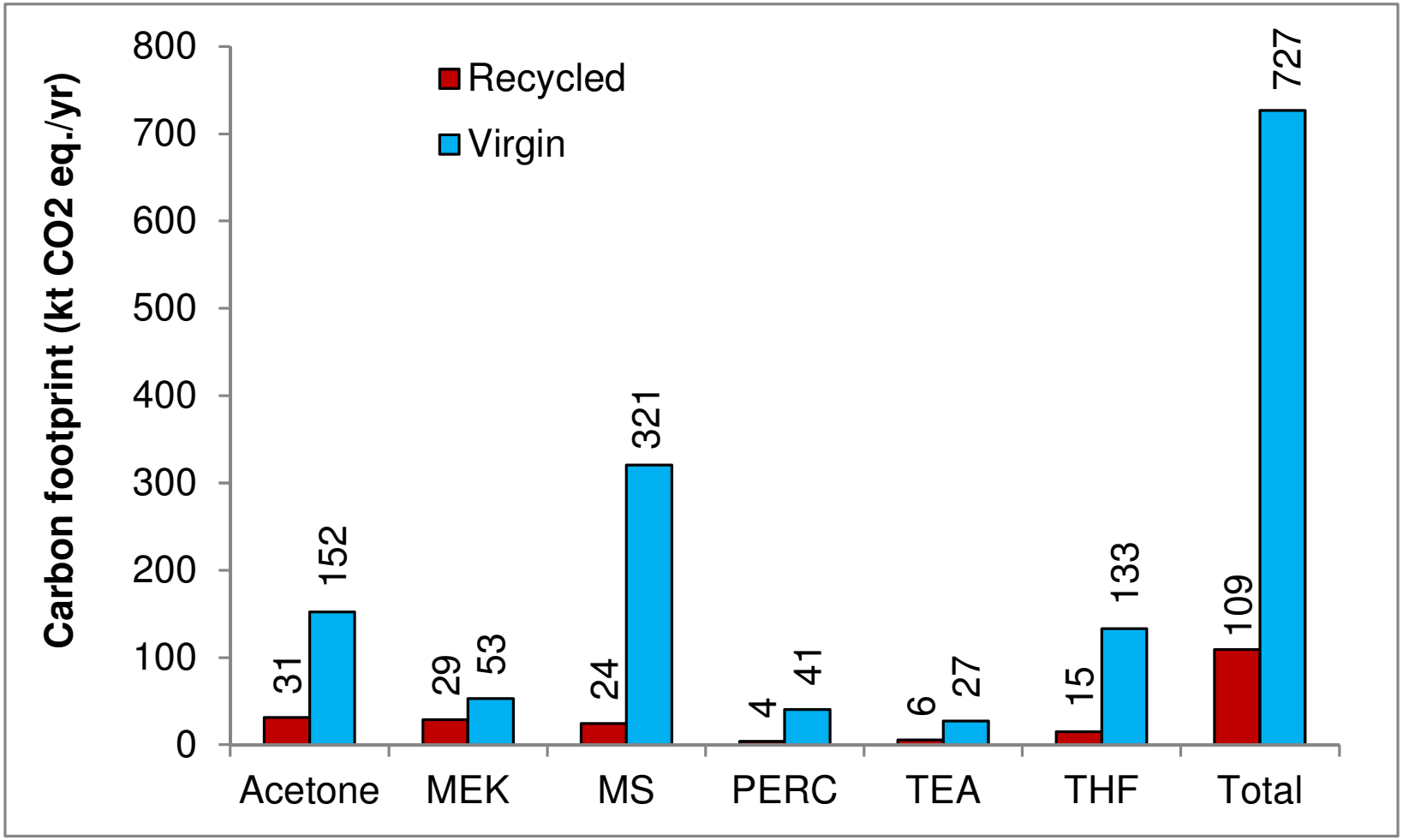
ETHOS Research
Environment · Technology · Society

Carbon footprint per tonne recycled and virgin solvents



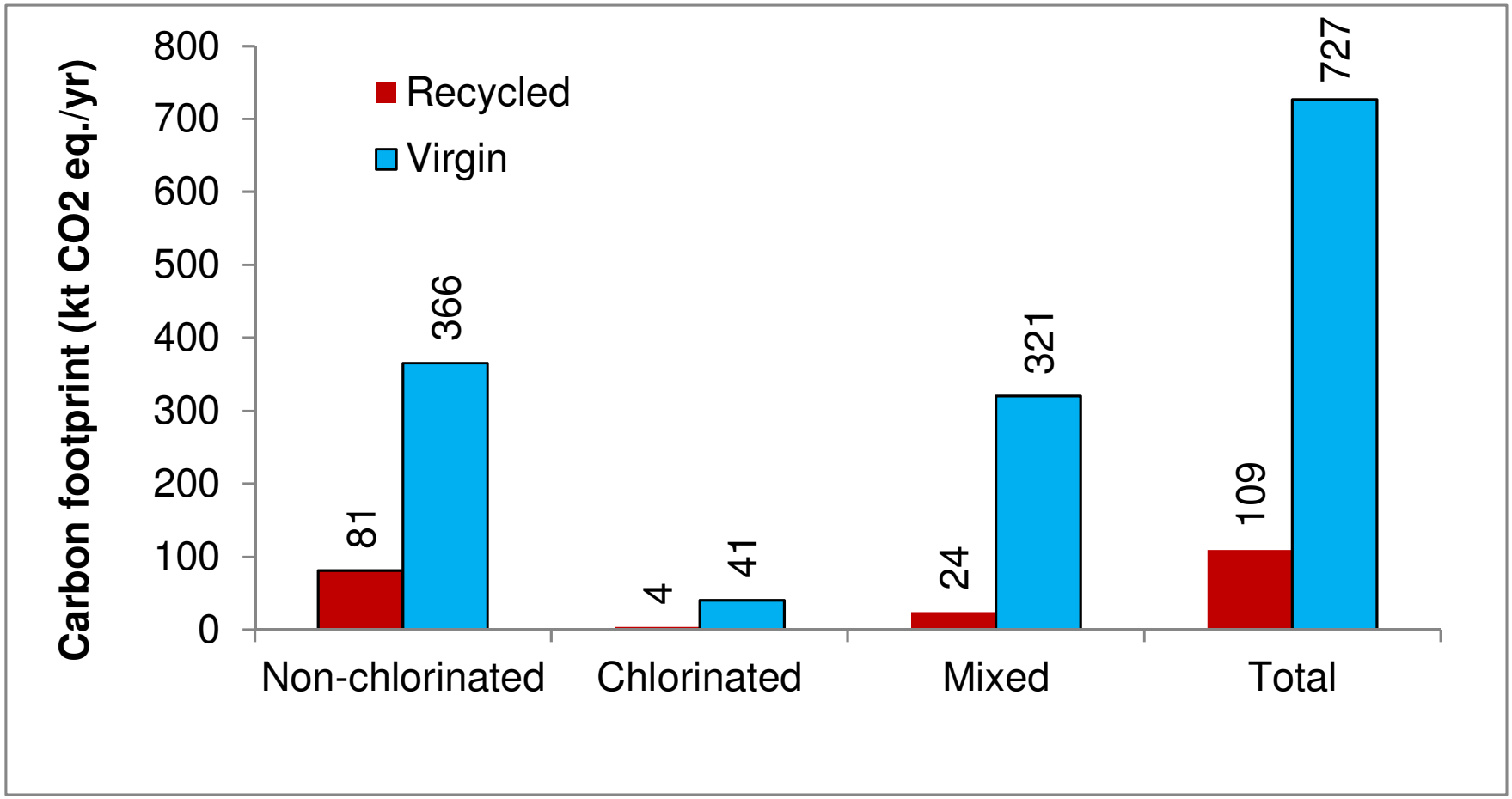
ETHOS Research
Environment · Technology · Society

Results



ETHOS Research
Environment · Technology · Society

Results



ETHOS Research
Environment · Technology · Society

Conclusions

- Solvent recycling reduces carbon footprint significantly compared to virgin solvents
- Recycling 309 kt solvents saves 618 kt CO_2 eq. per year
- Equivalent to avoiding GHG emissions of 280,000 diesel cars annually

ETHOS Research
Environment · Technology · Society

Disclaimer

- Any external communication of the results of the study should declare clearly the limitations related to the methodology and assumptions used in the study.

ETHOS Research
Environment · Technology · Society