

Erratum to: The international Journal of Life Cycle Assessment DOI 10.1007/s11367-020-01770-4

The original version of this article unfortunately contained an inaccuracy.

Table 2 reports that the avoided impact for PAN per kg of replaced product was 0.56 CO₂eq./kg. However, a flow of carbon dioxide in the PAN precursor fiber was not accounted for during the calculations. This has now been corrected and the new value is 5.7 kg CO₂eq./kg PAN. The correct value is included in an updated version of Table 2 below:

Table 2: Replaced products and the credits used in system expansion by substitution, allocation based on substituted impacts, and allocation based on inversed substituted impacts

	Replaced product	Avoided impacts per kg of replaced product (kg CO₂/kg or per MWh replaced product)	Avoided impacts per kg functional unit (kg CO₂/kg lignin)	Reference
Pulp (kg): Alternative 1	Cotton	2.9	27	Ecoinvent 3.3
Pulp (kg): Alternative 2	Reading a magazine on a tablet	0.35	3.2	Based on estimations from characterized results from Ahmadi Achachlouei et al. (2015) and Achachlouei and Moberg (2015)
Lignin (kg): Used as a material product	PAN	5.7	n/a	European Platform on Life Cycle Assessment (2018)
Lignin (kg): Used as a fuel precursor	Crude petroleum	0.24	n/a	Ecoinvent 3.3
Soap (kg)	Crude petroleum	0.24	0.063	Ecoinvent 3.3
Heat (MWh)	District heating	58	0.67	Werner (2017)

This changes the values for four data points: two in the allocation based on substituted impacts (see 2.1.11) and two in the allocation based on inversed substituted impacts (see 2.1.12) as shown in Figure 2 below:

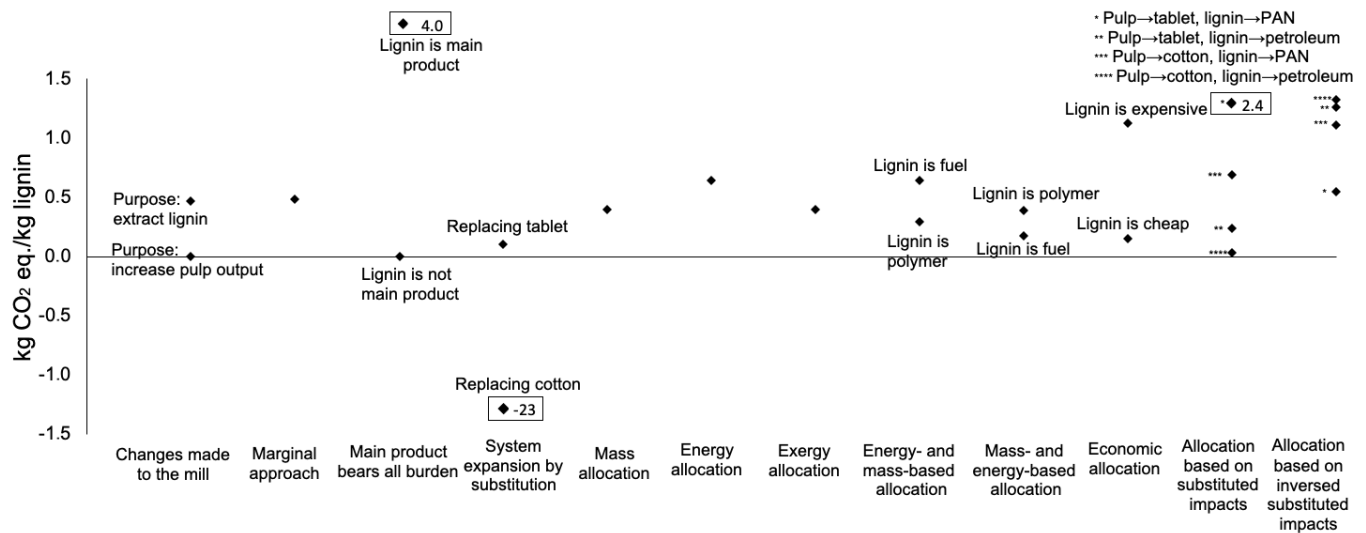


Fig.2 The climate impact of 1 kg of lignin using different allocation methods. The numbers in boxes are for outliers that do not fit on the y-axis scale

As a consequence, the text in the results and discussion section is changed from (changes in bold text):

”The original method suggested by Cherubini et al. (2011) results in a climate impact between **0.036–0.50 kg CO₂/kg lignin** (lowest for pulp replacing cotton and lignin replacing petroleum and highest for pulp replacing reading on a tablet and lignin replacing PAN), while the altered version (i.e. inversed) suggested by Sandin et al. (2015) results in a **higher impact** of around **1.2–1.3 kg CO₂ eq./kg lignin**, where the lowest value is for pulp replacing a tablet and lignin replacing PAN and the highest for pulp replacing cotton and lignin replacing petroleum.”

To:

”The original method suggested by Cherubini et al. (2011) results in a climate impact between **0.036–2.4 kg CO₂/kg lignin** (lowest for pulp replacing cotton and lignin replacing petroleum and highest for pulp replacing reading on a tablet and lignin replacing PAN), while the altered version (i.e. inversed) suggested by Sandin et al. (2015) results in **an impact** of around **0.55 kg-1.3 CO₂ eq./kg lignin**, where the lowest value is for pulp replacing a tablet and lignin replacing PAN and the highest for pulp replacing cotton and lignin replacing petroleum.”