

Understanding primary and secondary emission factors



Primary Vs. Secondary data – what is the difference?

Primary data, in general, is data that is more representative of the specific product in consideration and are typically higher quality than secondary data alternatives. Primary emission factors are those that are directly relevant to a company and based on company-owned primary activity data or provided by a supplier for a process under their control. Examples include:

- Cradle-to-gate PCF results provided by your own suppliers
- Emission factors that account for the stoichiometry of a given fuel
- Electricity supplier provided emission factors for purchased energy

Secondary data are data that are not directly collected, measured, or calculated from company data. The use of secondary reference databases for emission factors would be considered secondary data as they provide generic emission factors that may not be representative of a given product. Examples include:

- Regional industry benchmark factors
- Government statistics and publications
- Environmentally-extended input-output database (EEIO)
- Life cycle assessment databases (e.g., Ecoinvent)

What is a primary data score?

Product carbon footprints usually include a measurement called a **primary data score** which estimates the contribution of emissions from primary data sources to the overall PCF. A greater primary data score indicates that the PCF value has more primary data and so is more likely to be representative and accurate for the given product, whereas a low primary data score suggests the PCF is less representativeness and potentially is of greater uncertainty.

This can be used as an indication for how transparent a PCF is and actions to improve a PCF can focus on improving the primary data score by collecting more primary data for the most significant emission sources. This in turn would make the PCF more representative.