

Appendix C: Calculating emissions intensity metrics

The Scope 3 Standard states that companies may report emissions intensity metrics to avoid misinterpretation of emission results as more durable products with longer lifetimes would at first appear to have higher lifetime use-phase emissions.

To convert absolute emissions to an emissions intensity metric, companies should calculate emissions per a relevant unit of measure. Examples of emissions intensity metrics are given in table C.1.

Table [C.1] Examples of emissions intensity metrics using different units of measure

Product	Emissions intensity metric
Can of cola	kg CO ₂ e per 330ml can
Washing machine	kg CO ₂ e per wash
Television	kg CO ₂ e per hour of viewing
Car	kg CO ₂ e per kilometer driven

Calculation formula [C.1] Calculating emission intensity metrics

CO₂e emissions per functional unit of product =

$$\text{number of units over lifetime of sold product:} \\ \frac{\text{total lifetime emissions}}{\text{units per lifetime of products}}$$

The reporting company must first decide on the unit of measure to apply to the product. The emissions intensity metric is then calculated as shown in formula C.1 above.

Example [C.1] Calculating emission intensity metrics

Company A manufactures and sells washing machines. The company calculated their emissions from use of sold products (category 11) as 500,000 kg CO₂e.

Company A then decided to report an emissions intensity metric to give context to the use-phase emissions of its washing machines. An example of an intensity metric that could be used for washing machines is noted in example 11.2 (*Calculating indirect use-phase emissions from products that indirectly consume energy (fuels or electricity) during use*) – kg CO₂e per wash. Using this intensity metric, emissions are calculated as follows:

$$\begin{aligned} &\text{Number of units over lifetime of all products sold in the reporting year} \\ &= \text{lifetime units per product} \times \text{total number of products sold in reporting year} \\ &= 1,500 \text{ washes} \times 2,000 \text{ washing machines} \\ &= 3,000,000 \text{ washes over lifetime of all sold products} \end{aligned}$$

**As stated above, the total emissions from use of Company A's sold products is 500,000 kg CO₂e.
So the emissions intensity can be calculated as follows:**

$$\begin{aligned} \text{emissions intensity metric} &= \frac{\text{total lifetime emissions}}{\text{number of functional units performed over lifetime of sold products}} \\ &= \frac{500,000}{3,000,000} \\ &= 0.1667 \text{ kg CO}_2\text{e per wash} \end{aligned}$$