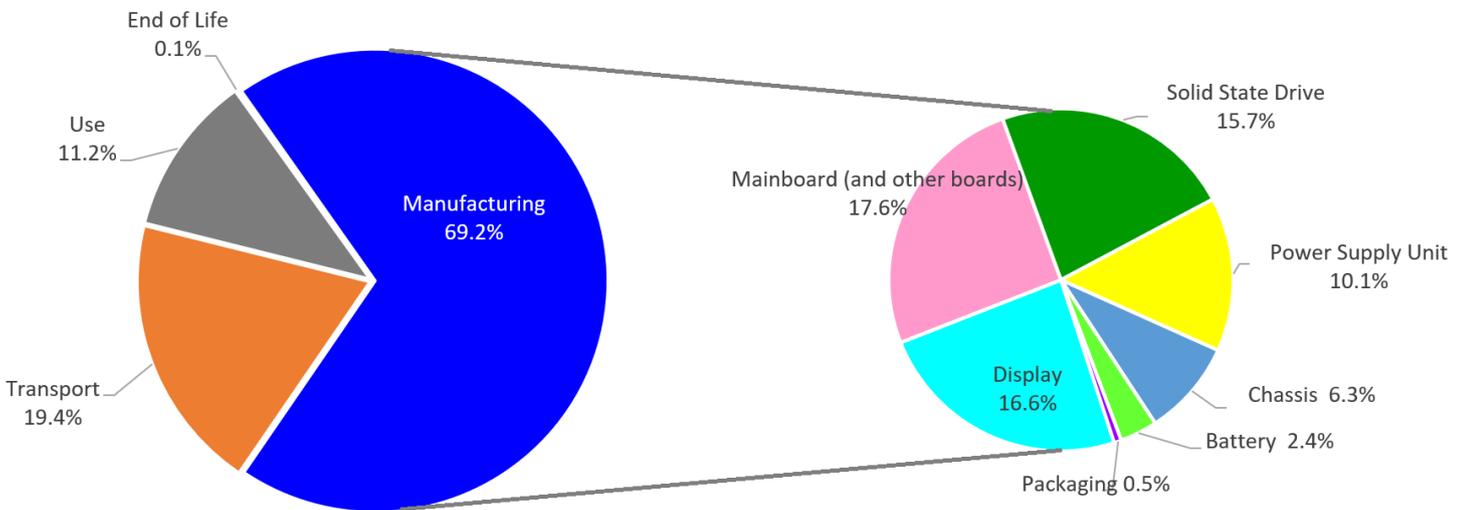


Product Carbon Footprint: TOUGHBOOK 55

At Panasonic, we are committed to continuously improving the environmental performance of our products and processes. By calculating our product's carbon footprints, we can be more transparent for insights of the impacts that occur throughout the product lifecycle for the customer. The assessment of product carbon footprints helps identify where the focus of our ongoing efforts is to innovate strategies for an impact category - global warming potential.



Panasonic uses the Product Attribute to Impact Algorithm (PAIA) to estimate the potential release of greenhouse gas (GHG) emissions over the product lifecycle. PAIA is a streamlined Life Cycle Assessment (LCA) methodology developed by Massachusetts Institute of Technology's Materials System Laboratory. The PAIA tool conforms with IEC TR 62921, which is a quantification methodology for GHG emissions for Information Communication Technology (ICT) systems.

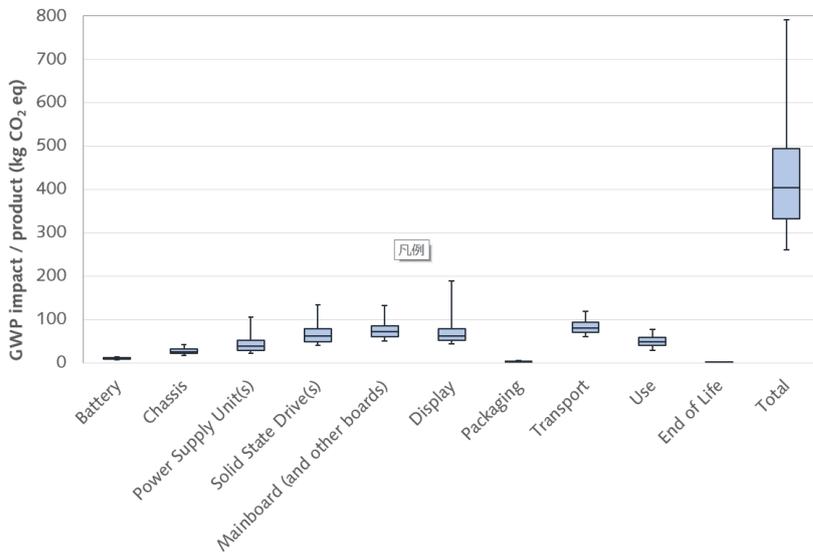
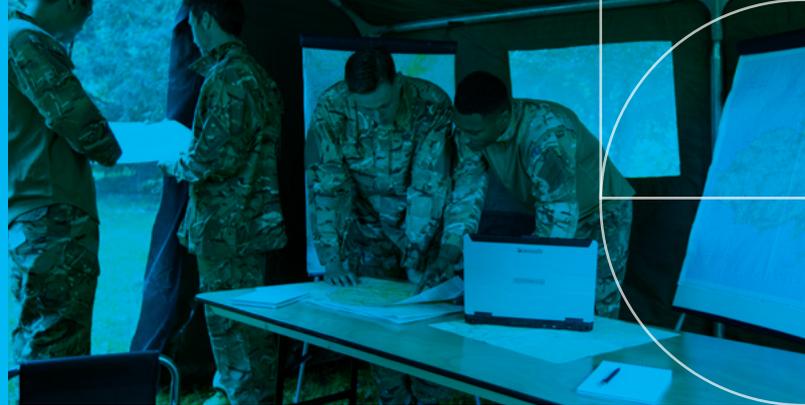
A Product Carbon Footprint (PCF) is an LCA that focuses on a single impact category, global warming potential. The PCF of a product includes emissions related to four key product lifecycle stages: (1) Manufacturing, including the extraction, production and transport of raw materials, the manufacture of components and product assembly; (2) Transportation from assembly to customer; (3) Use of a product; and (4) Product End of Life.

This product's estimated carbon footprint:

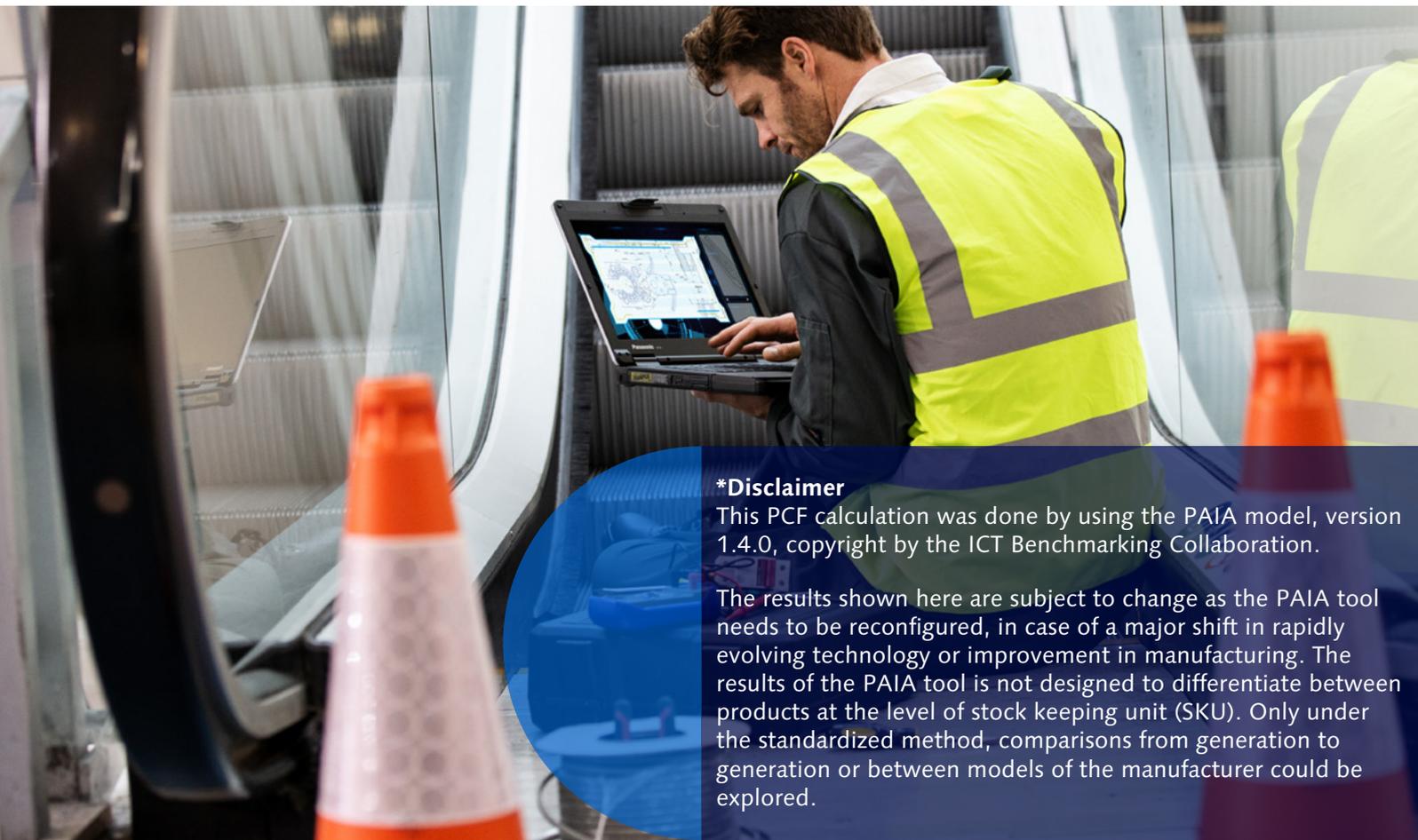
427kgCO₂e
+/- 59.6 kgCO₂e

The PAIA tool aims to provide an efficient estimate of the carbon impact of a product by using limited system attributions of the product, unlike a lengthy, resource-intensive process required in full LCAs. The PAIA tool can also provide an estimate of the uncertainty of the results.

The uncertainty in the most significant aspects of the PCF is provided in a box-and-whisker plot on the chart. This plot shows the median, upper and lower quartiles and maximum and minimum values for PCF, based on the simulations done by PAIA.



Product size	Screen size	Assembly location
345mm x 272mm	14 inch	Taiwan
Product lifetime	Energy demand (yearly TEC)	Use location
5 Years	15.0 kWh	North America



***Disclaimer**

This PCF calculation was done by using the PAIA model, version 1.4.0, copyright by the ICT Benchmarking Collaboration.

The results shown here are subject to change as the PAIA tool needs to be reconfigured, in case of a major shift in rapidly evolving technology or improvement in manufacturing. The results of the PAIA tool is not designed to differentiate between products at the level of stock keeping unit (SKU). Only under the standardized method, comparisons from generation to generation or between models of the manufacturer could be explored.