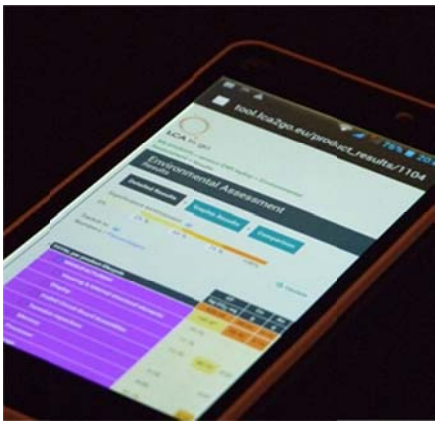
Electronics
Case study Buoy Manufacturer



The case study company is for two decades in the vanguard of the development of equipment for the fisheries sector, being the worldwide leader in long distance tuna detection technologies.

Pioneer in the utilization of satellite communications applied to fishing, the company is constantly working on the development of new products that improve the sustainability of fishing.

Supported by Gaia, the Association of Electronic and Information Technologies of the Basque Country, the company benefitted from a training provided by Fraunhofer technicians on how to use the LCA to go tool and therefore, how to apply life cycle thinking to their businesses model and how to improve the environmental performance in new products and new projects.

In this particular case, the challenge was to assess the environmental impacts throughout the whole lifecycle of a Buoy for the tuna fishing, as well as, to evaluate the limitations of the tool for such devices.

The buoy performs a complete and real-time study of the detections with analysis by layers of a resolution up to 2 cm, giving information of the position, course, speed, water temperature, battery status and sound. In addition, an integral analysis of the echo is carried out through the combination of High Technologies in Communication via Satellite and the most modern ultrasonic techniques.

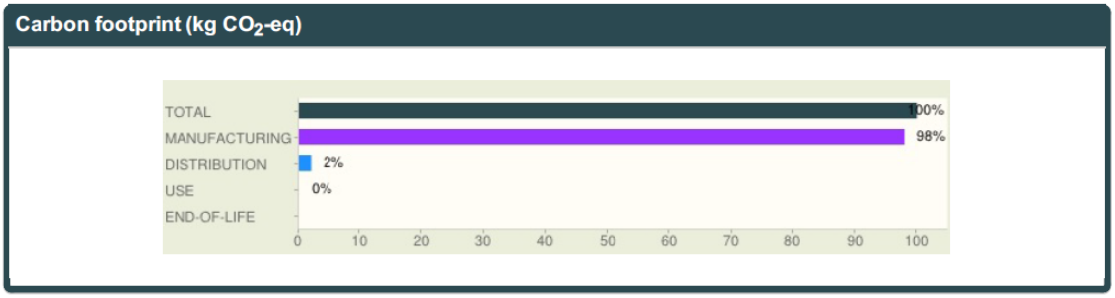
On the basis of two years operational life, it does not consume auxiliary energy being autarkic through the use of photovoltaic panels and rechargeable batteries.

For this particular case, the background data provided by the tool covers only to a limited extend the whole range of components and materials that shape the buoy. For example, several chemicals used in its production are not integrated in the tool; and therefore, they were introduced in different sections closer to their nature.

In the view of the above, the end result does not respond completely and reliably to the environmental impacts generated by the product during its life cycle, but helps for a first screening. The use of more detailed and advanced LCA tools is recommended, if the assessment is meant to guide major decisions.

However, this assessment can be considered an initial evaluation of the impacts generated throughout the life cycle of the buoy.

Consequently, according to the results shown in the following graph, as the buoy has neither auxiliary consumption nor relevant distribution distance; the highest value for the carbon footprint corresponds to the manufacturing stage with 77.67 kgCO2-eq out of 78.69 kgCO2-eq.



In order to reduce the carbon footprint in the manufacturing stage, the lifetime of products could be extended. Extending buoys life reduces the number of new buoys produced, with an associated decrease in energy consumed for their production. In addition to this, a design for upgrade, as well as, an extended guarantee could be offered to buoys purchasers during the whole lifetime.

To conclude, according to the company, although the tool is really interesting due to its simplicity and zero cost, the database should be completed with chemical substances, different types of batteries, etc. Nevertheless, the company is now considering using the tool as a first assessment for the ecodesign of new products since other tools available in the market do not fit with their products due to their special features.