

## Annexe 1. Declaration of the environmental selection criterion applicable to the shortlist

### **Environmental footprint criterion (weighted 50%)**

This criterion assesses the suitability and strength of the proposal as measured against the requirements of the illustrative tasks in terms of the environmental benefits provided. The degree to which the offered product/service shows the capacity to resolve the questions underlying in the environmental issues related to the yachting industry in a realistic and well-structured way, as well as whether the knowledge of the companies on the lifecycle of their proposed product/service is suited to the needs set out by the commission for evaluating the environmental footprint.

#### ***1) Background information on environmental footprint***

The environmental footprint of the presented sustainable solutions (i.e. products and services) is going to be assessed through the application of the Life Cycle Assessment (LCA) methodology, that represents the most used way for conducting an environmental assessment aimed at providing quantitative results.

The LCA methodology is standardised by ISO (ISO 14040 - 44), and its use is spread in the industries of worldwide as well as in the public institutions (e.g. European Union) (Frank and Rubik 1999, Sonnemann 2018).

The LCA has a holistic view of environmental interactions along the life cycle of a product covering a range of activities, from the extraction of raw materials and the production and distribution of energy, through the use, and reuse, and final disposal of a product. LCA studies identify key materials and processes within the product's life cycles that are likely to pose the greatest impacts, including resource demand and human health impacts. These assessments delineate the full benefits and costs of a product or process, which allows decision-makers to select the most effective solution.

#### ***2) Environmental footprint evaluation***

The evaluation of the ecological footprint of the presented sustainable solutions follows the ISO 14040 - 44 standards and the LCA guidelines, and these latter are going to be specified according to the typology of product/service of the shortlist.

The holistic approach of LCA allows to obtain quantitative outcomes related to the following environmental indicators, each of those is representing an environmental issue relevant to the yachting industry (except the EcoPoint that represents an aggregative and normalised result).

- Emission of greenhouse gases, (GWP, 100 years – expressed in carbon dioxide (CO<sub>2</sub> eq.)
- Emission of acidifying substances (AP, expressed in terms of Sulphur dioxide (SO<sub>2</sub> eq.)
- Emission of gases that contribute to the creation of ground-level ozone (POCP, expressed in terms of ethylene (C<sub>2</sub>H<sub>4</sub> eq.)
- Emission of substances to water contributing to oxygen depletion (EP, expressed in terms of phosphate (PO<sub>4</sub><sup>-3</sup> eq.)
- Emission of ozone-depleting gases (ODP, expressed in terms of CFC<sup>-11</sup>meq., 20 years)
- NO<sub>x</sub> (expressed in kg)
- SO<sub>x</sub> (expressed in kg)
- PM10 (expressed in kg)
- Water Stress Index (expressed in m<sup>3</sup>)
- EcoPoint (expressed in Pt)

To conduct the study and to obtain a quantitative result for each of the ten considered indicators, the company shall provide the data concerning the sustainable product/service and the mainstream alternative product/service.

Figure 1 indicates the flowchart of the system boundaries, i.e. the activities that are taken into account in the LCA study.

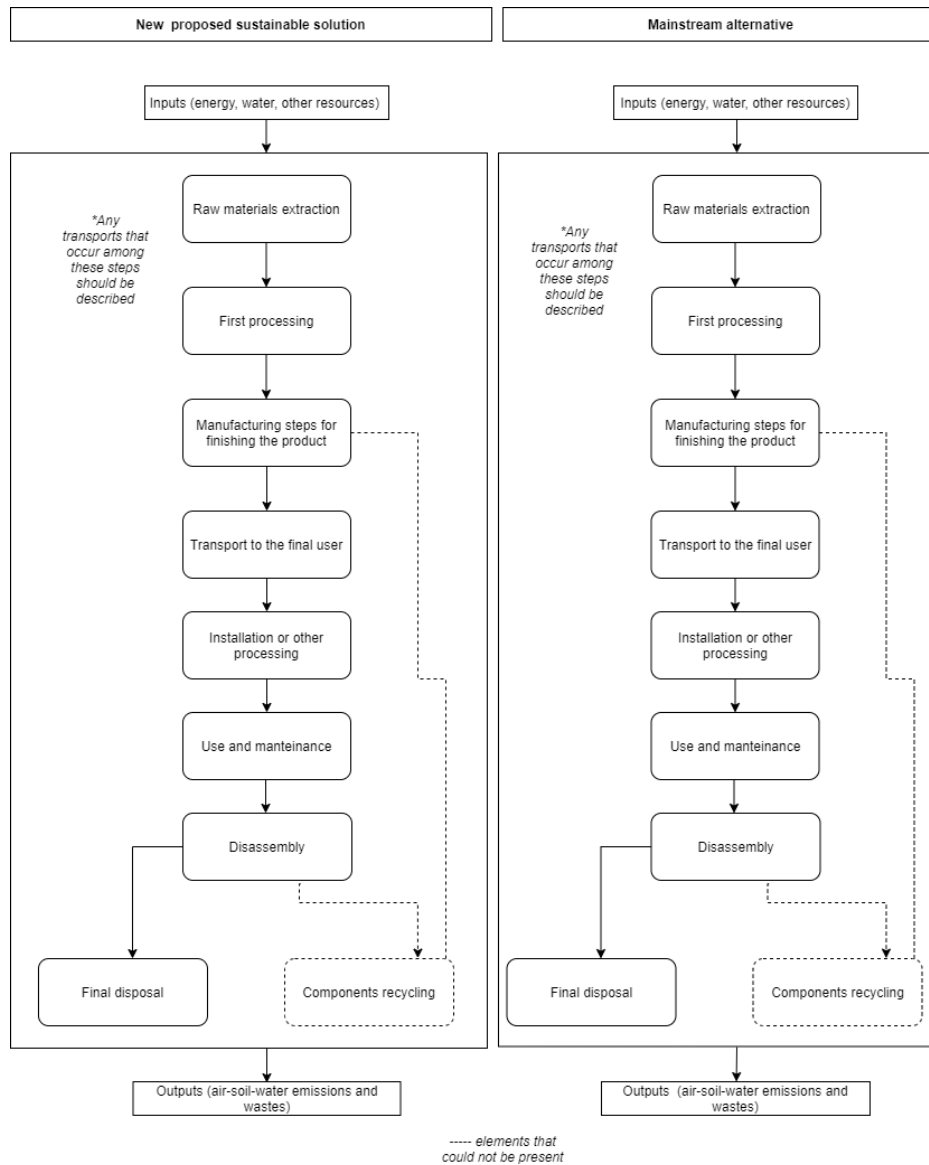


Figure 1: Flowchart describing the possible elements and life cycle stages that could be taken into account for the environmental assessment.

Figure 1 describes the default data required for developing the screening LCA study, and we point out that represents a general framework that later could be customised according to the specific features of the presented products/services of the shortlist.

A comparative LCA study based on the new solution and the mainstream alternative is going to be conducted since it is indispensable for attesting the environmental benefit obtained from the proposed product/service.

The choice of the indicated mainstream product/service shall be motivated by the company with substantial arguments. The selection of the mainstream alternative can fall on product/service even provided by the same company; it is relevant that the choice still represents the most used product/service on the market of the yachting industry.

The shortlist that is constituted by three companies is going to be rearranged according to the LCA outcomes. Therefore the first place is assigned to the company that presents the product/service with the highest environmental benefit and then followed by the other two companies according to their score.

## **Bibliography**

ISO (2006 – 2016) 14040:2006 Environmental management — Life cycle assessment — Principles and framework ISO/TC 207/SC 5

ISO (2006 – 2018) ISO 14044:2006 Environmental management — Life cycle assessment — Requirements and guidelines ISO/TC 207/SC 5

Frankl P and Rubik F (1999) Life cycle assessment in industry and business: adoption patterns, applications and implications. Springer Science & Business Media.

Sonnemann G et al. (2018) Life Cycle Thinking and the Use of LCA in Policies Around the World. In: Hauschild M., Rosenbaum R., Olsen S. (eds) Life Cycle Assessment. Springer, Cham. [https://doi.org/10.1007/978-3-319-56475-3\\_18](https://doi.org/10.1007/978-3-319-56475-3_18)