

# Deliverable B2

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*PEF report summary*

*Company 1*

*Product 1: Torque Arm*

*Product 2: Scatola IR600*

**Life Effige**

| Environmental Footprint  
| For Improving and  
| Growing Eco-efficiency



Pilot company description	
Productive field	Casting of Iron
Number of employees	98
Turnover/year	25M/2017
Region	Lombardia

## 1. Methodology

This Product Environmental Footprint (PEF) study has been performed as a supporting study in the framework of the Life EFFIGE Project with the main objective of testing the Product Environmental Footprint Category Rules (PEFCR) developed for the product category “cast iron raw casting”.

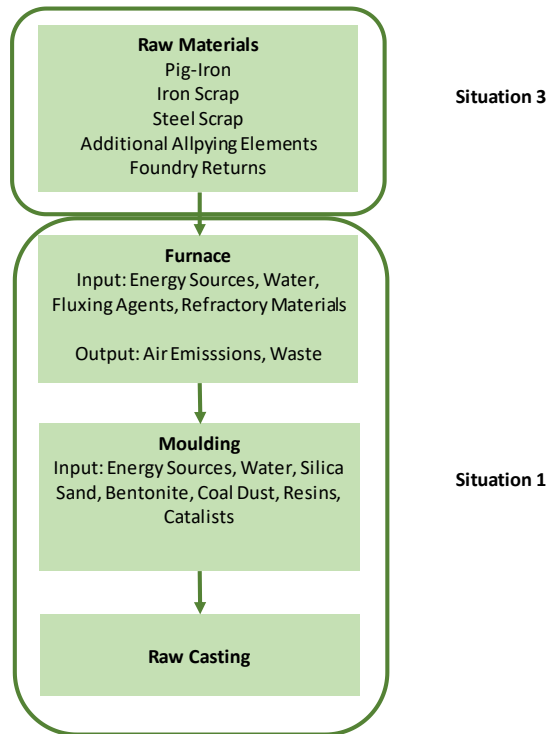
This supporting study has been carried out in compliance the Draft PEFCR for Cast Iron Raw Casting published on 27 July 2018, the requirements of the PEF Guide (Annex II to Recommendation 2013/179/EU) and the PEF Pilot Guidance v.6.3. Since some of the requirements of the latest PEF Guidance (i.e. Impact assessment method, default dataset, etc.) can only be applied within the EU PEF Pilot Phase on products category covered by existing PEFCR, some modelling choices that differ from requirement of Guidance v.6.3 have been made, based on older versions of the document and expert judgment.

Since raw casting is an intermediate product, all the default impact categories are included. The default normalization factors provided by the PEF Guidance have been applied for the default impact categories.

## 2. Functional unit and system boundaries

The functional unit, as defined in the PEFCR, is 1 ton of raw casting at foundry gates.

The system boundaries are "cradle to foundry gate" including all the environmentally relevant upstream processes and core processes. Since this is an intermediate product, there is no use stage or end-of-life stage included.



Primary data have been collected for the raw casting production process, referred to year 2017.

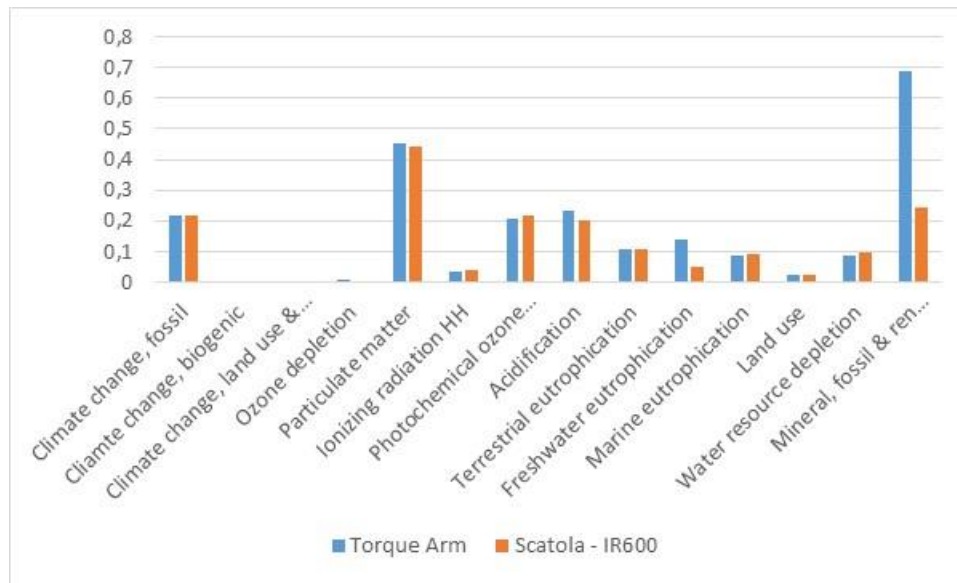
### 3. Product environmental footprint results

In this supporting study the relevant life cycle stages, processes, elementary flows and impact categories have been identified for both product analysed and compared to that identified in the screening study.

For both products, the most relevant impact categories are:

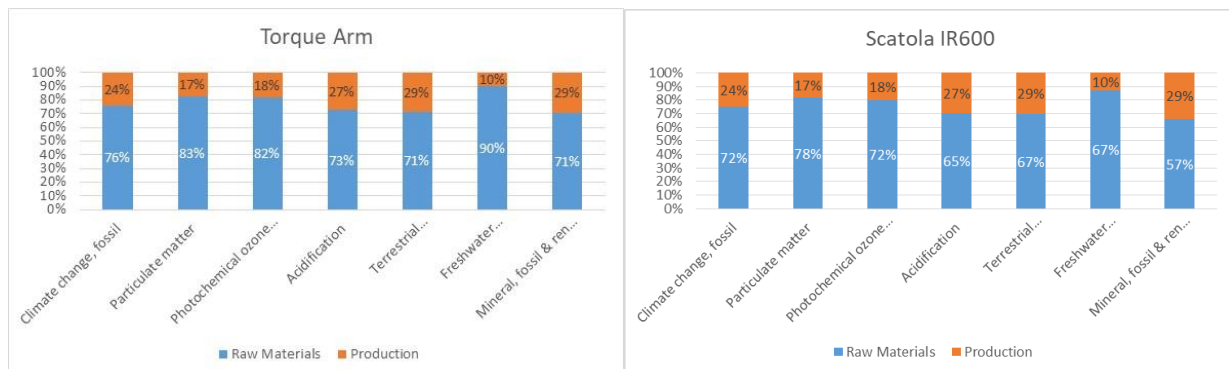
- Climate change, fossil;
- Particular matter;
- Photochemical ozone formation;
- Acidification;
- Terrestrial eutrophication;
- Freshwater eutrophication;
- Mineral, fossil & renewable resource depletion.

All relevant impact categories identified in the screening report have been confirmed, excluding ionizing radiation.



Relevant Impact categories

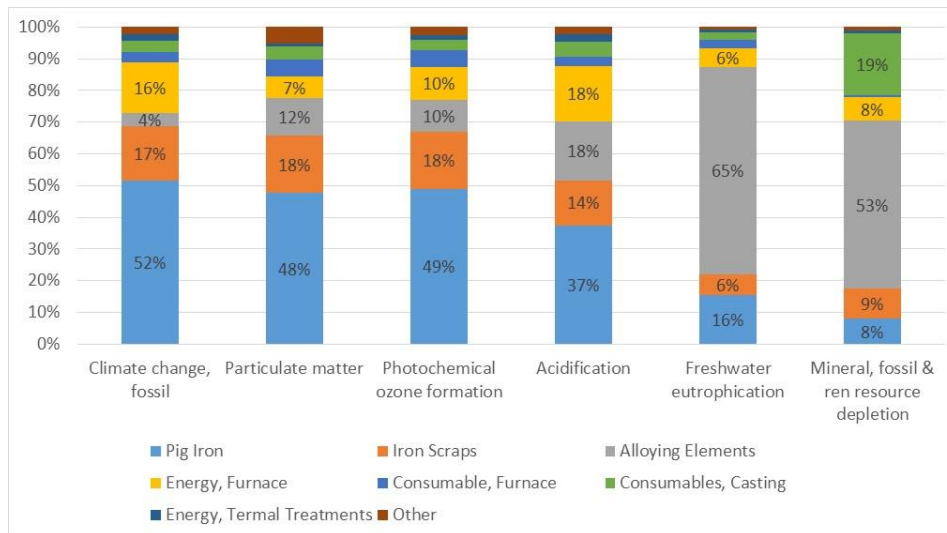
The most relevant life cycles stages for all the relevant impact categories of both products are raw materials (production and supply) and foundry activities.



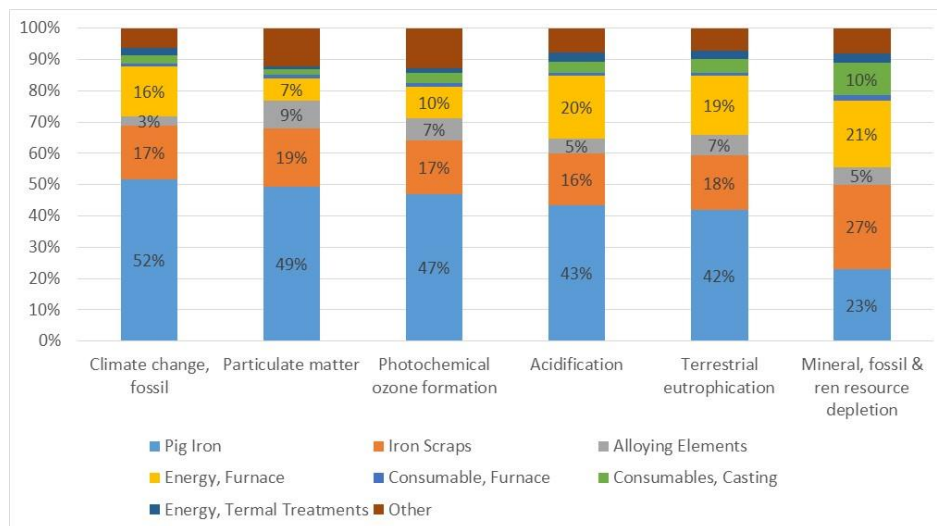
Relevant Life Cycle Phases

The most relevant processes identified are:

- Pig Iron (from Raw Material life cycle stage);
- Iron & Steel Scrap (from Raw Material life cycle stage);
- Additional Alloying Elements (from Raw Material life cycle stage);
- Energy – Furnace (from Production life cycle stage);
- Emissions – Furnace (from Production life cycle stage);
- Consumables - Casting (from Production life cycle stage);



**Torque arm relevant processes**



**Scatola IR600 relevant processes**

The most relevant elementary flows are:

- Dust emission from furnace;
- Metals emission from furnace;
- Dust emission from casting;
- VOC emission form casting;

As an input for the improvement of the PEF CR it is suggested to add additional alloying elements within the list on mandatory data to be included in the PEF Study.