EPD_Environmental Product Declaration

WHASS CANTILEVER STOOL

Ref_JY30000

Report Data 12.11.2018

Certificates

ISO 9001

ISO 14001
ISO 14006. Ecodesign
PEFC. Programme for the Endorsement of Forest Certification
FSC®. Forest Stewardship Council

GBCe. Green Building Council Spain

1. Details of the system

Type	New Product	X	Redesign		Studied Year 2018

Declaration Scope: From extraction of raw materials to complete desk solution, including end of life.
The detail of each of the phases considered and its scope is included below

Materials	Production	Transport	Use	End of life
Including the extraction and processing of raw materials and component sourcing to its delivery at the Actiu Technological Park.	Consider the production and assembly processes used in Actiu.	Includes from the Actiu Technological Park to our customers facilities. Transport is provided through light commercial transport.	This stage has not environmentally relevance for life cycle analysis.	Any product can be disposed of in different ways, or become a resource. Drawing on national average dates, it is supposed that aluminium, wood and cardboard packaging is recycled, while the rest is treated as urban waste.

2. RAW MATERIALS USED FOR THE PRODUCT. Product specifications, including packaging

	KG of product solution	Percentage %	Quality of finishes	
			Production of raw materials	Processed
Plastic PP	0,000	0,00%	Bibliographic data	Bibliographic data
Steel	2,000	34,51%	Bibliographic data	Bibliographic data
Plastic	1,134	19,57%	Bibliographic data	Bibliographic data
TOTAL	**3,134**	**54,08%**		
% recicled materials		34,41%		
% reciclable materials		54,08%		

ACTIU product design is made to facilitate the separation of its components and recycling.
The product is designed to help companies LEED® certification. You can obtain LEED® credits with our product. On the one hand, contains a high percentage of recycled materials and is manufactured with low emissions to the atmosphere. On the other hand, has been designed with ergonomic standards. Finally, it can be easily recycled because it is designed for disassembly and identificacion of very simple components. This will help you achieve LEED® credits for employee health and innovation

The verification process life cycle analysis is performed by independent experts in Ecodesign (Consultant Business Area) and using the criteria of the standard ISO 14006 "Ecodesign".

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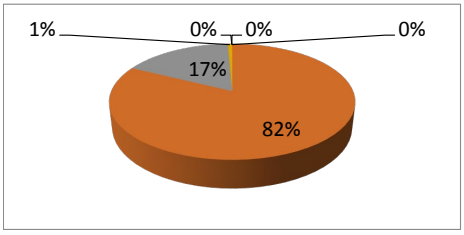
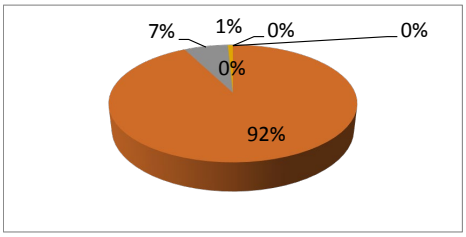
3. Impacts produced by category. Five substaces area included in each category have the greatest impact in each category

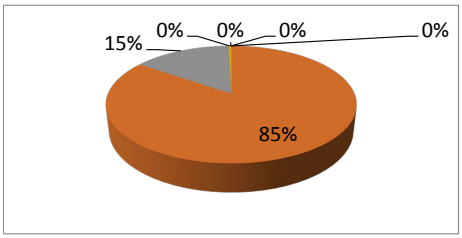
Impact category	Substance	Unit	Total
ACIDIFICATION	Substancias remanentes	kg SO2 eq	0
		kg SO2 eq	0,057179295
	Ammonia	kg SO2 eq	0,01182345
	Nitrogen dioxide	kg SO2 eq	0,000473179
	Sulfur oxides	kg SO2 eq	6,6239E-265
	0	0	0
	TOTAL	kg SO2 eq	0



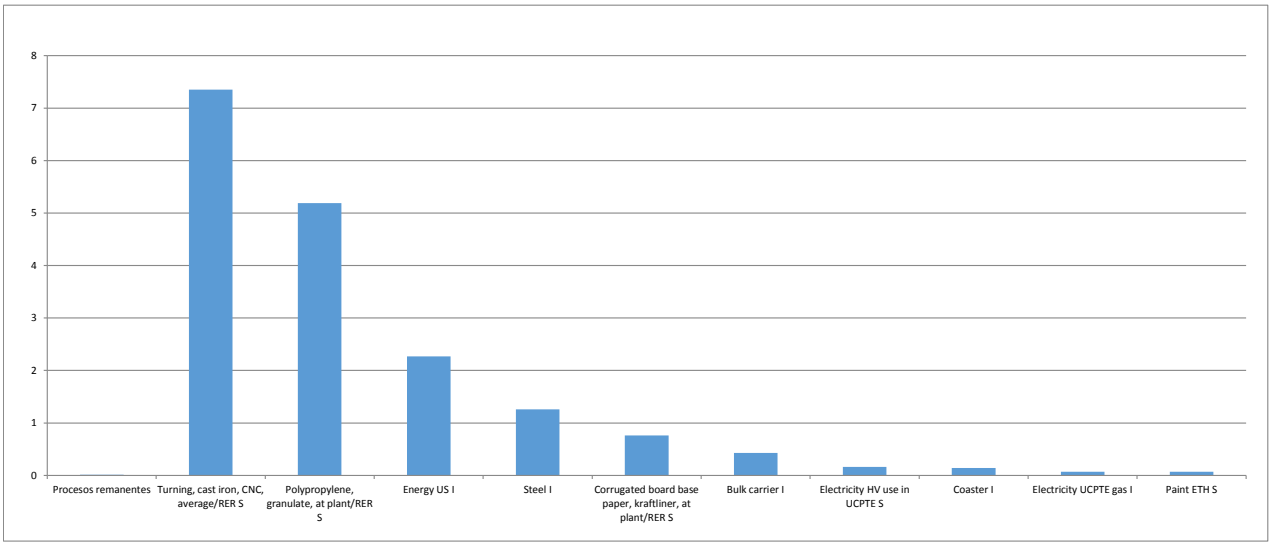
Impact category	Substance	Unit	Total
EUTROFIZATION	Substancias remanentes	kg PO4--- eq	0
	Nitrogen oxides	kg PO4--- eq	0,009556959
	Ammonia	kg PO4--- eq	0,000709361
	Dinitrogen monoxide	kg PO4--- eq	8,03491E-05
	Nitrogen	kg PO4--- eq	3,22863E-07
	Phosphate	kg PO4--- eq	5,15515E-11
	TOTAL	kg SO2 eq	0



Impact category	Substance	Unit	Total
GLOBAL WARMING	Substancias remanentes	kg CO2 eq	0
	Carbon monoxide, fossil	kg CO2 eq	15,20414419
	Carbon dioxide	kg CO2 eq	2,688889054
	Carbon dioxide, fossil	kg CO2 eq	0,069268933
	Dinitrogen monoxide	kg CO2 eq	6,6239E-265
	0	0	0
	TOTAL	kg CO2 eq	0



Impact of group elements (materials, processes, energy, use, transport and waste)



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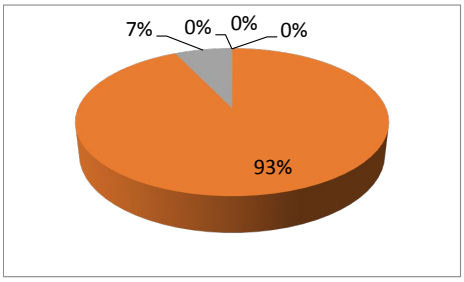
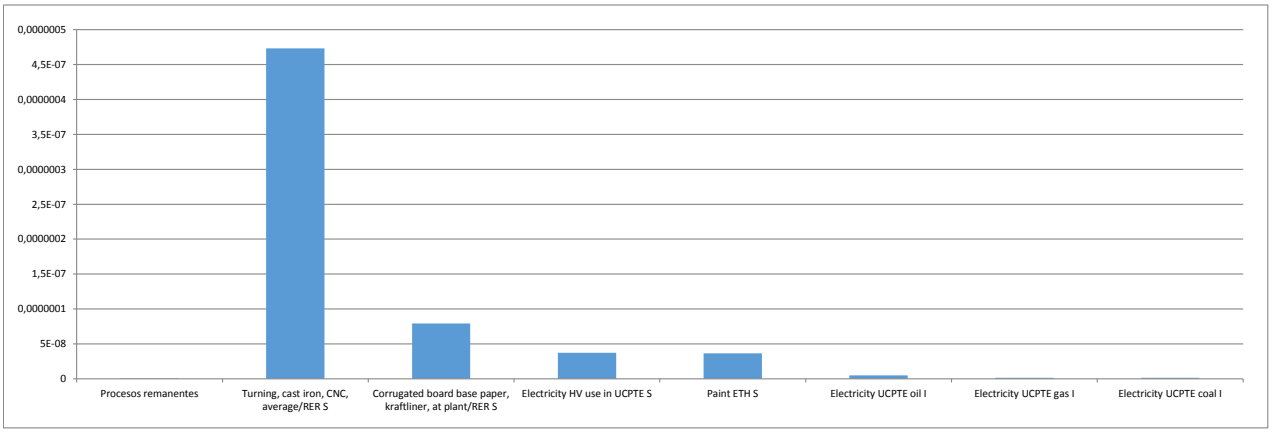
4. Impacts produced by category. Five substaces area included in each category have the greatest impact in each category

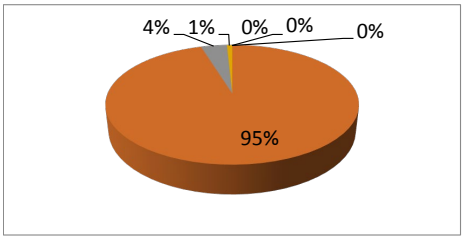
Impact category	Substance	Unit	Total
REDUCING OZONE	Substancias remanentes	kg CFC-11 eq	0
	Methane, tetrachloro-, CFC-10	kg CFC-11 eq	5,89654E-07
	Methane, bromochlorodifluoro-, Halon 1211	kg CFC-11 eq	4,51462E-08
	Methane, bromotrifluoro-, Halon 1301	kg CFC-11 eq	4,98051E-11
	Methane, trichlorofluoro-, CFC-11	kg CFC-11 eq	6,6239E-265
	0	0	0
	TOTAL	kg SO2 eq	0



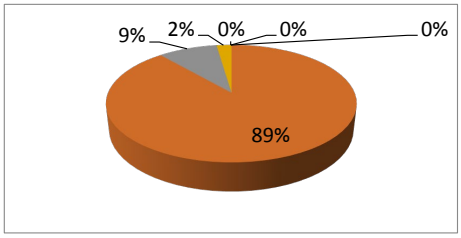
Impact of group elements (materials, processes, energy, use, transport and waste)



Impact category	Substance	Unit	Total
PHOTOCHEMICAL SMOG	Substancias remanentes	kg C2H4 eq	0
	Ethane	kg C2H4 eq	0,018907365
	Carbon monoxide	kg C2H4 eq	0,000786679
	Carbon monoxide, biogenic	kg C2H4 eq	0,000161171
	Ethene	kg C2H4 eq	6,6239E-265
	Sulfur oxides	kg C2H4 eq	6,6239E-265
	TOTAL	kg SO2 eq	0



Impact category	Substance	Unit	Total
NON-RENEWABLE RESOURCES	Substancias remanentes	MJ eq	0
	Coal, brown, in ground	MJ eq	356,2667795
	Coal, 18 MJ per kg, in ground	MJ eq	36,57311892
	Coal, 29.3 MJ per kg, in ground	MJ eq	9,257133234
	Coal, hard, unspecified, in ground	MJ eq	6,6239E-265
	Oil, crude, 41 MJ per kg, in ground	MJ eq	6,6239E-265
	TOTAL	kg SO2 eq	1,7076



WASTE	Total NO HAZARDOUS	KG	1,77
	Total HAZARDOUS	KG	0,0121

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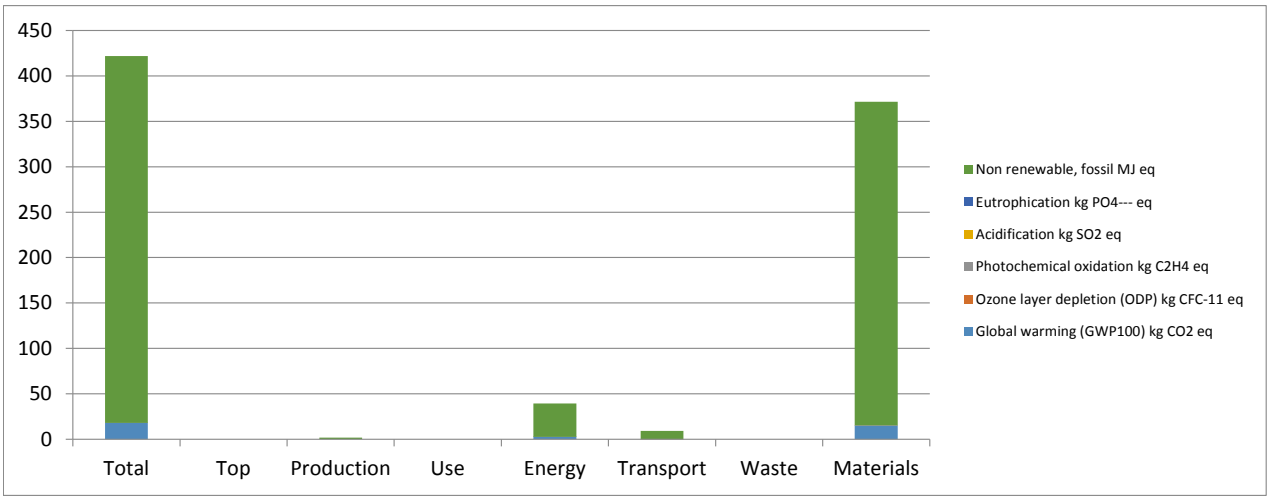
5. Impact produced by life cycle stage. In includes six stages: Production, Use, Energy, Transport, Waste and Materials.

Impact Categry	Uts.	Total	Top	Production	Use	Energy	Trsp.	Waste	Mat.
Global warming (GWP100)	kg CO2 eq	17,96230218	0	0	0	2,688889054	0,069	0	15,2
Ozone layer depletion (ODP)	kg CFC-11 eq	6,34849E-07	0	0	0	4,51462E-08	5E-11	0	6E-07
Photochemical oxidation	kg C2H4 eq	0,019855215	0	0	0	0,000786679	2E-04	0	0,019
Acidification	kg SO2 eq	0,069475924	0	0	0	0,01182345	5E-04	0	0,057
Eutrophication	kg PO4--- eq	0,010346669	0	0	0	0,000709361	8E-05	0	0,01
Non renewable, fossil	MJ eq	403,8046317	0	1,7076	0	36,57311892	9,257	0	356,3



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6. Ecodesign improvements considered.

ACTIU products are designed considering different environmental strategies. According to their level of complexitiy, the strategies used are classified into one of the following. Here are some of the choices for ecodesign significant product.

PRODUCT STRATEGY ECODESIGN	CHOICES
Low impact materials selection	Designed to be manufactured with 34,41% recycled materials 100% recycled aluminium Powder paint with no VOC amissions Limitation on use of hazardous substances. Whithout chromium, mercury, cadmium Recycled cardboard packaging
Optimization of product techniques	Optimizing energy use throughout the production process Painting processes with the best available techniques Recovery unused paint in the process. Zero emissions of VOCs. Recovery of paint not used in the process for reuse. Metal cleaning by closed water circuit Optimization of energy use in the manufacturing process: Heat recovery in the painting process, automated manufacturing systems to save energy.
Optimization of distribution system	Packing in flat packages for space optimization. Modular system for maximum use and combination of different program models
Optimization of product life	15 years minimum duration product Easy maintenance and cleaning of the product. It is easily cleaned with a damp cloth with water. The product is part of a modular program. Easy to modify, extend and repair to optimize its useful life.
Optimization of the end of system life	Easy separation of product components High degree of recyclability of the product: 54,08% Packaging reuse system between ACTIU and its providers to avoid waste generation

Bibliography and references

ISO 14025 Environmental labels and declarations – Type III

ISO 14044:2006 "Environmental management. Life cycle analysis. Requirements and guidelines"

UNE - EN ISO 14006:2011 "Environmental management systems. Guidelines for the incorporation of ecodesign"

Methods for calculating environmental impacts

Data base: ETH-ESU System processes, Ecoinvent system processes, IDEMAT, EDIP, IPCC, Ecological Scarcity 2006.