Eco Materials Adviser: Comparison Report

Part/Assembly number: EcoFridge (Final)
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This report details the changes in the eco impact of your new concept assembly compared to your baseline assembly. A comparison is made for each of the indicators.

Contents

Notes:

- For information on how these figures are calculated, and how to interpret them, please see the appendices at the end of this report.

Overview: change compared to baseline

-29 % reduction in Energy usage

-28 % reduction in CO_2 footprint

10 % increase in Water usage

16 % increase in Cost

RoHS No change in non-compliant parts

No change in non-compatible parts

Notes:

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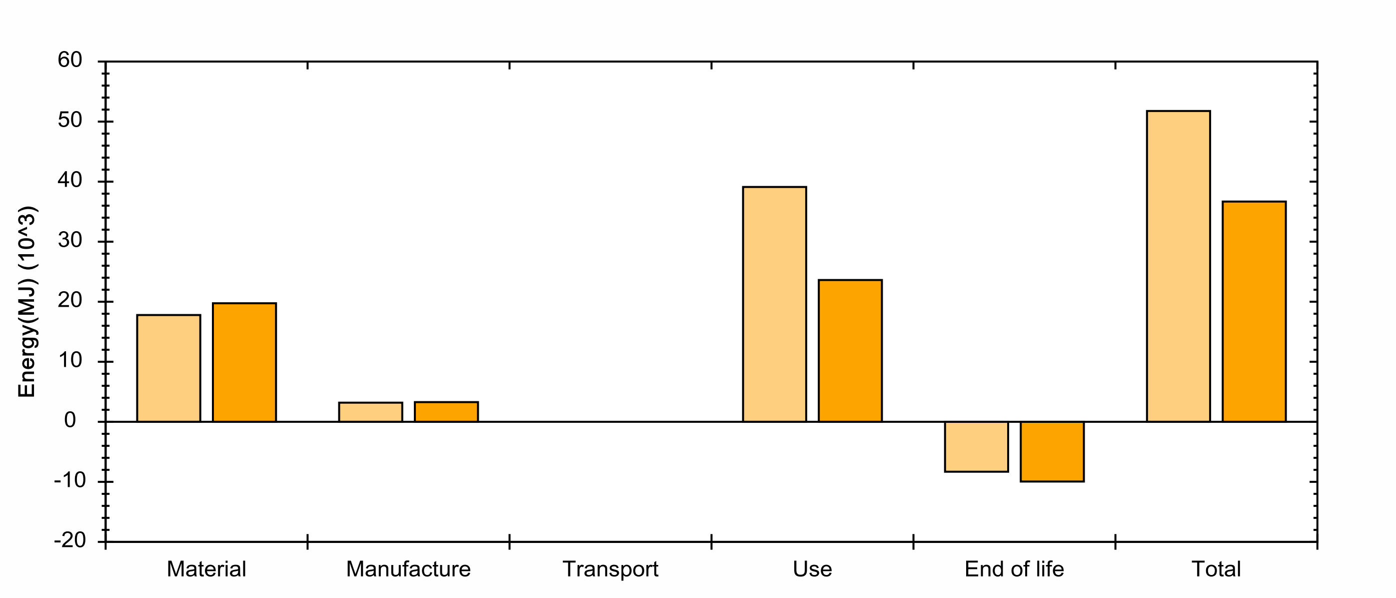
Energy usage: summary for 18 parts analyzed



	Baseline	New concept	Change	Percentage
Material (MJ)	18000	20000	2000	11 % increase
Manufacture (MJ)	3200	3300	92	3 % increase
Transport (MJ)	0.0	0.0	0.0	0 % change
Use (MJ)	39000	24000	-15000	-40 % reduction
End of life (MJ)	-8300	-10000	-1600	-20 % reduction
Total (MJ)	52000	37000	-15000	-29 % reduction

Notes:
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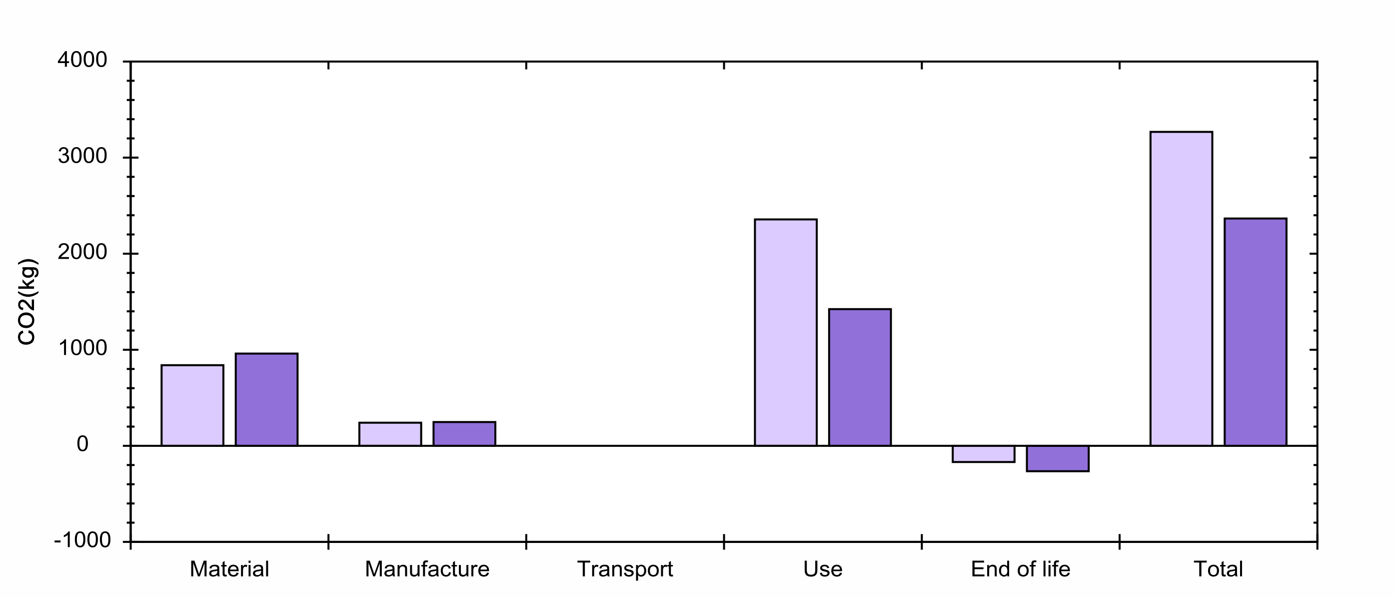
CO2 footprint: summary for 18 parts analyzed



	Baseline	New concept	Change	Percentage
Material (kg)	840	960	120	14 % increase
Manufacture (kg)	240	250	6.9	3 % increase
Transport (kg)	0.0	0.0	0.0	0 % change
Use (kg)	2400	1400	-930	-40 % reduction
End of life (kg)	-170	-260	-96	-57 % reduction
Total (kg)	3300	2400	-900	-28 % reduction

Notes:
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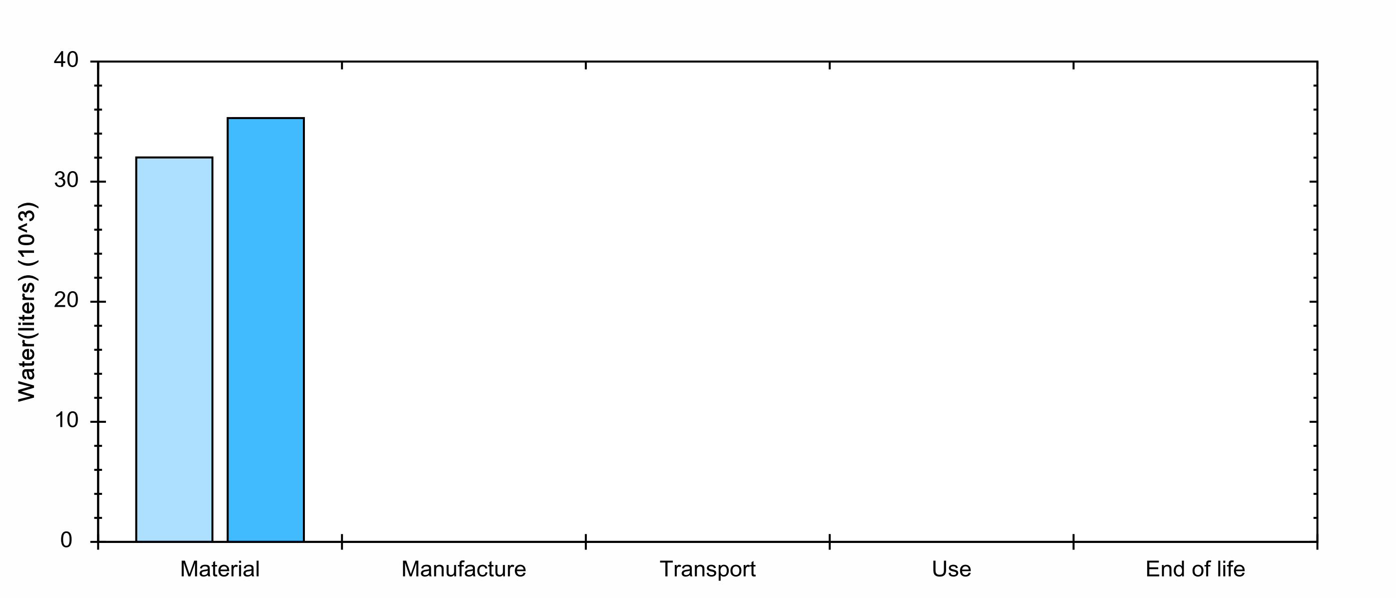
Water usage: summary for 18 parts analyzed



	Baseline	New concept	Change	Percentage
Material (liters)	32000	35000	3300	10 % increase
Manufacture (liters)	Not included in analysis			
Transport (liters)	Not included in analysis			
Use (liters)	Not included in analysis			
End of life (liters)	Not included in analysis			

Notes:
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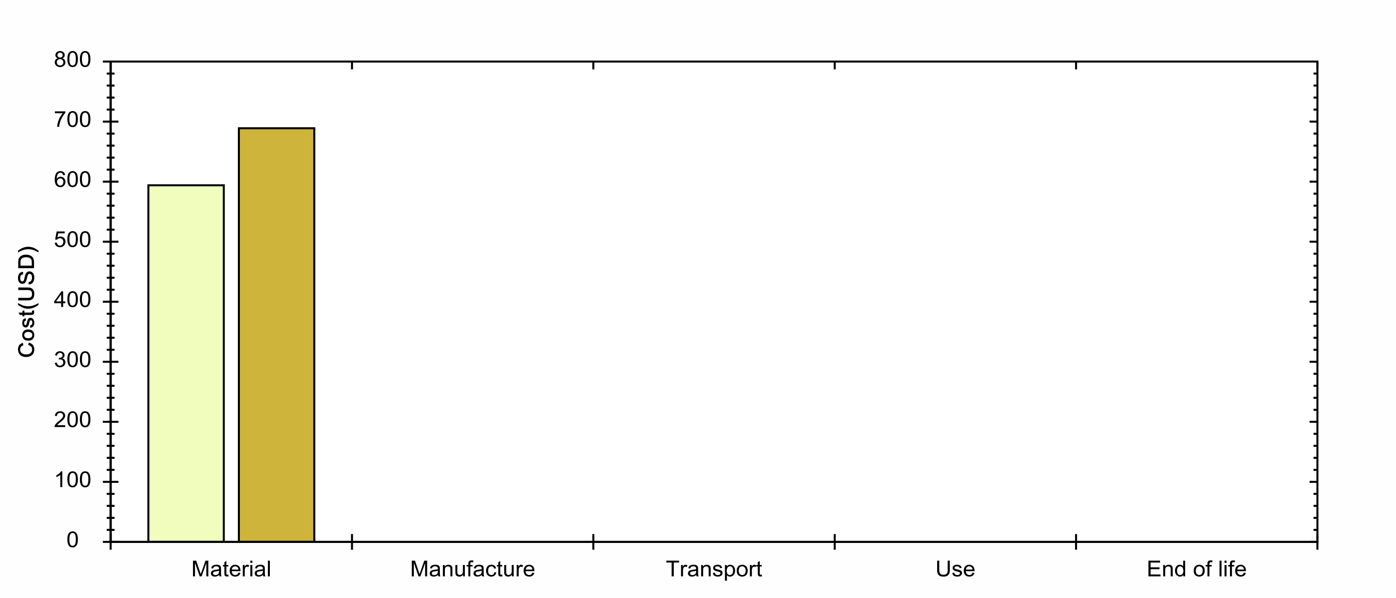
Cost: summary for 18 parts analyzed



	Baseline	New concept	Change	Percentage
Material (USD)	590	690	95	16 % increase
Manufacture (USD)	Not included in analysis			
Transport (USD)	Not included in analysis			
Use (USD)	Not included in analysis			
End of life (USD)	Not included in analysis			

Notes:
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RoHS compliance and Food-contact compatibility: summary for 18 parts analyzed

	Baseline	New concept	Change
RoHS	0 non-compliant parts	0 non-compliant parts	No change in non-compliant parts
Food	1 non-compatible part	1 non-compatible part	No change in non-compatible parts

Important:
A material that is described as 'non-compliant' with the RoHS Directive or 'non-compatible' for food contact applications means that the material is likely to contain substances that: are restricted under the RoHS Directive; or make the material unsuitable for food contact applications, respectively. By default, parts with no material assigned are also assumed to be RoHS non-compliant and food contact non-compatible. See the 'How to improve this analysis' section for details of which parts have no material assigned.

If a material is described as RoHS Directive 'compliant' or food contact 'compatible', it means that there are commercial grades of that material available which are RoHS Directive compliant or suitable for food contact applications respectively.

It is the responsibility of the user to determine the status of the specific material grades used with regard to RoHS Directive compliance and food-contact compatibility.

Notes:
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End of life: summary for 18 parts analyzed

	Baseline	New concept	Change
Reuse	0	0	0
Recycle	12	12	0
Downcycle	6	6	0
Combustion	0	0	0
Landfill	0	0	0
No material assigned	0	0	0
Total	18	18	0

Definitions of end of life strategies:

Reuse Redistribution of a product to a consumer sector that is willing to accept it in its used state, either for its original purpose or for a different one.

Recycle (Also called closed-loop recycling.) Reprocessing of recovered materials at the end of product life, returning them to the supply chain as a material of similar type, with similar performance and embodied energy.

Downcycle (Also called open-loop recycling.) Reprocessing of recovered materials at the end of product life, returning them to the supply chain as a material with lower performance and lower embodied energy. For example: conversion of PET bottles into fibers for fleece clothing; crushing of materials into aggregate or filler replacement.

Combustion Recovery of a proportion of embodied energy (in the form of heat) by controlled combustion.

Landfill Disposal of a product by committing it to landfill.

Notes:
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To improve the accuracy of your analysis, please address the following issues:

- [ReportMathUtil].[ToNumberInputFailedMessage]
- No process assigned to Insulation.
- Transport information has not been entered.
- [ReportMathUtil].[ToNumberInputFailedMessage]

Notes:
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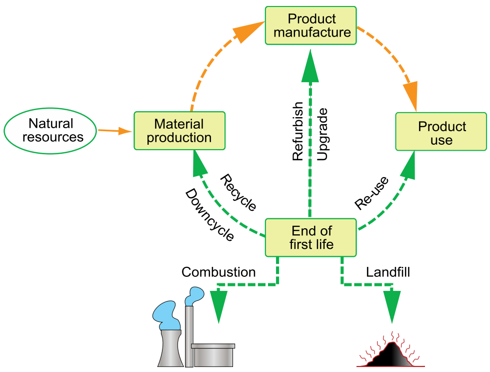
Appendix A: How are these figures calculated?

The environmental indicators included in this analysis are based on detailed, quantitative studies of the natural resources and energy required to:

- produce a material,
- process that material in manufacturing operations,
- manage that material at the end of its useful life.

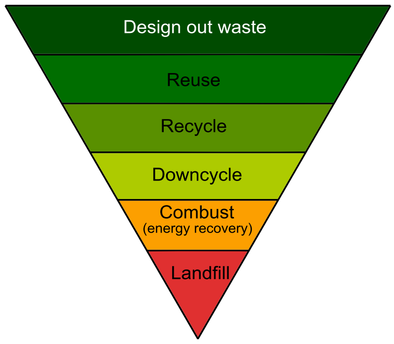
These studies allow us to say how much energy is consumed or how much CO2 is released into the atmosphere in order to produce, process and manage 1kg of a material.



The base version of the Eco Materials Adviser focuses on the analysis of the material production, product manufacture and end of life phases of the product lifecycle. The full version extends this analysis to include the eco impacts associated with the transport and use phases.

For each material in the database a default end of life strategy has been assigned (recycle, landfill etc.) based on the most common strategy employed in industrial practice today. Where the end of life phase is shown as reducing the eco impact, this is due to the environmental benefits of avoiding the production of virgin materials (or fuel, in the case of combustion with heat recovery). Further explanation of these calculations and the extensive range of data sources can be found in the 'Eco Impact analysis' section of your user guide.

Appendix B: The Waste Hierarchy



The principle of the waste hierarchy is to prioritise End of Life (EoL) strategies towards the top of the hierarchy, such as 'reduce' and 'reuse', which help to retain the value and quality of materials, over strategies such as 'combust' and 'landfill' where material value is lost. Note that 'Design out waste' is not an EoL strategy as such but a design principle - look for opportunities to reduce the amount of material used throughout the product lifecycle.

It is important to note that the appropriate EoL strategy for an assembly is not simply determined by the EoL strategy proposed for the constituent parts. This is because the selection of an appropriate EoL strategy for an assembly will also depend on factors such as the methods used to join materials, the structure of the product and the need for certain parts to be treated separately to comply with legislative requirements (e.g. WEEE Directive). For instance, even if all parts of a product are listed as recyclable, this does not necessarily mean that the assembly can be recycled.