Telephone LCA

Online tool used: Greenfly

ME221

LCA Rough Assign. II

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Product Life = 5 years

Functional Unit = One telephone over product lifetime

System Boundary = Raw materials acquisition, manufacturing, transportation, use, and waste management for a single corded telephone

Assumptions:
600 min. of calling time per month, 0.6W energy consumption during calls and 0.1W during standby

Summary:

The Greenfly Report results indicate Manufacturing and Use as being the top two contributors to Global Warming and Energy Demand for this product. In order to reduce the impact of the telephone, we would suggest the following improvements:

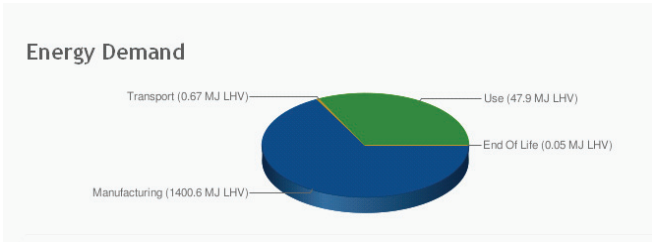
Dematerialization – Considering current handset size, we recommend a change in the form factor to reduce the physical footprint in all dimensions without affecting the functionality. This would also improve the end stage waste from this product.

Low Impact Materials – The majority of the phone is made from ABS plastic. Since this product does not require high mechanical, hygienic, tolerance or aesthetic requirements, it could be replaced with recycled plastic material.

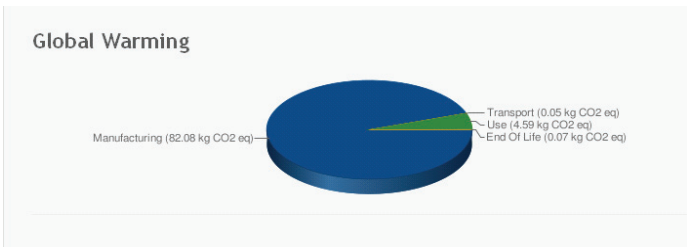
Design for Durability – Although this product is designed for several decades of use, we estimated the lifecycle to be 5 years based on typical user habits in replacing household appliances. Two options are available to us: Re-design the product to match its durability with user habits (materials that breakdown faster) or to influence user behavior with respect to preserving vs. replacing their appliance.

Reduced Impact Use – The largest contributor to telephone energy use came from the seemingly small standby power consumption over the 5 year life span. Finding a way to reduce or eliminate this through circuit redesign would be the most effective way to reduce the phone's energy footprint.

Energy Demand



Global Warming



Total Impact

Totals	Solid Waste	Water Use	Global Warming	Energy Demand
Manufacturing	28.42 kg	2.44 kL	82.08 kg CO2 eq	1,400.6 MJ LHV
Transport	0 kg	0 kL	0.05 kg CO2 eq	0.67 MJ LHV
Use	0.18 kg	0.01 kL	4.59 kg CO2 eq	47.9 MJ LHV
End of Life	0.39 kg	0 kL	0.07 kg CO2 eq	0.05 MJ LHV