

C-Light

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THE PROBLEM

In Africa, Asia, and Latin America 1.5 billion people live without the benefit of electricity. The result is a lack of light from when the sun sets until the sun rises. Solutions such as kerosene lamps and open fire are used for light but these light solutions are of low light quality, expensive in oil consumption, have a high environmental impact, have a bad influence on people's health and increase the risk of fire accidents. The exact amount of oil burned in kerosene lamps is difficult to estimate, but the Lumina project presume that \$38 billion is spend on lighting for the poor, equal to 190 megatons of CO₂ emissions.

The lack of light do not only limit people in their doings but it clearly effect children's school competences. Based on UNICEF statement there is a need for light for these children to get an education. Furthermore it has been observed from studies with implementation of LED light in Malawi that the average study hours per day raised from 1.45 hour to 2.71 hour by having free light provided.

THE C-LIGHT

The design of the C-Light is based on a bachelor project conducted in collaboration with UNICEF and a business plan for the C-Light in the course Knowledge based entrepreneurship. Based on the need discovered by UNICEF, IKEA made the Sunnan Table lamp but this product is not donated to children any more. The C-Light has been developed based on research of the context in which the children are living and with special focus on their need, social relations, ergonomic dimensions and environment. The selection of materials and components has been done with a focus on the environmental effects in their life cycle. The lamp is concealed in order to make it more robust for the daily use and to shell the electronic component and battery from leaking if the lamp is disposed in a land field. The lamp can also be burned efficiently by incineration.

The C-Light is a small, robust and concealed lamp, designed for schoolchildren in developing countries. It has two charging options and two lighting function. It can be charged by a solar cell placed on the top of the lamp or by shaking the lamp which generate power via the induction principal. The C-Light has a lantern function in the top which spread light in which children can do homework at the same time as other family members using the light for other doings and the C-Light have a flash light function in the bottom for navigation

THE FUTURE

C-Light supports children's daily life, including school work, and other duties. This will affect the education of the children by providing more opportunities to do homework. The C-Light will give the children's families more room in the budget by reducing the expenses on lighting and the quality of the light will be more continuous. Indirectly will the C-Light reduce the environmental impact because the light will come from the sun or be generated by shaking and not from burning oil. This will furthermore reduce the risk of respiratory diseases from inhaling gases from burning kerosene and lower the risk of fire accidents.