

Kwantlen Solar LED Lantern Project: Bringing Light to Students in Rural Ghana

***Project description:** The Kwantlen Students Ghana Portable Solar Lantern Project is a student-led initiative to create, assemble, and supply affordable, environmentally-friendly and sustainable solar-powered portable lanterns to rural communities in Ghana with sole purpose of providing light to village students to complete their homework and other school assignments. The project which will use low cost technology will be the sole responsibility of Kwantlen Polytechnic University students taking Professor Charles Quist-Adade's Social Justice in Local and Global Contexts (Soci 2311) class. The project will also be carried out with the collaboration of the Ghanaian-Canadian Association of British Columbia (GCABC), African Education through Technology (Afretech), and the Canada-African Foundation for Rural Education (CANAFRE).*

Objective

The cardinal objective of this project is to create and supply rural and village communities in Ghana with environmentally-friendly LED solar-powered portable lanterns with the aim of providing dependable light for village students to study, do their homework and complete other school assignments. Kwantlen Polytechnic University students will create, assemble, and supply solar-powered lanterns to identified villages and village schools. The proposed project will afford Kwantlen students a unique opportunity to learn and participate in Global citizenship, while honing their skills in their respective areas of study.

Project purpose:

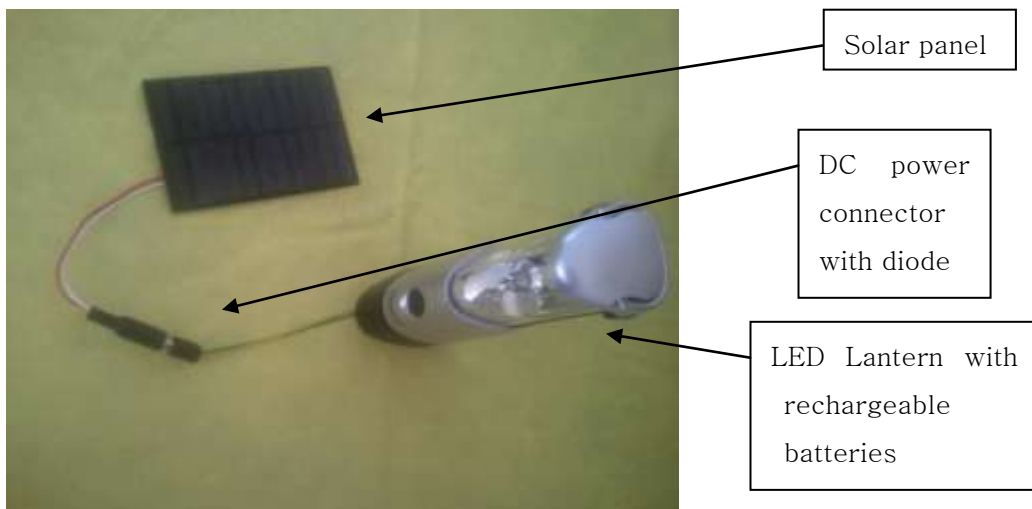
- To design and develop an inexpensive and sturdy LED solar powered portable lantern*
- To make assembly manual for the lantern*

- *To hold events (workshops, colloquia, etc) at Kwantlen campuses for students to learn about the project*
- *To develop a website where students and others can discuss and exchange opinions and ideas about the current project and future projects*
- *To inform students how Coca-Cola supports education not only in developed country such as Canada but also a developing country such as Ghana.*
- *To fundraise*

Project Manager and Faculty Advisor: Dr. Charles Quist-Adade

Technical Director and Supervisor: Jong Kim

Sample solar LED lantern



Major Components

1. LED Lantern: LED lanterns are more energy efficient than traditional lanterns
2. Solar Panel: Small solar panel, diode, and power connector for charger
3. Rechargeable Batteries: 3 ~ 4 x 2000mA ~ 2400mA AA batteries

LED Lanterns

Requirements:

Regular LED lanterns that uses 3 ~ 4 AA (or AAA) batteries

Price range: \$5 ~ \$12 each

LED lanterns can be found at any local electronic stores



Solar Panel

Requirements:

Power : 5.5V 150mA ~ 220mA

Price: \$8 ~ \$12

Diode: \$0.1 ~ \$0.2 per each

Solar panel is used to charge with diode

Batteries

Requirements :

Capacity & Size: 2000mA ~ 2400mA rechargeable AA (or AAA)

Price : \$2.5 ~ \$3 each

References

- How to make battery charger with solar panel: <http://www.instructables.com/id/Solar-Battery-Charging/step4/Charging-Your-Battery-Part-1A/>
- Diode: http://www.learnabout-electronics.org/diodes_01.php