

The Solar Backpack in Refugee Camps
Lebanon
Shehryar Asif
Pakistan
Bucknell University

The Solar Backpack project focuses on providing a sustainable way to help solve the refugee crisis in Lebanon. We aim to create awareness about renewable energy to young refugee students through informative workshops and provision of solar backpacks.

No other fund-raising efforts contributed to our project.

Solarbrite is a social enterprise started by Professor Amal Kaban who works in the Bucknell University's Electrical and Computer Engineering department. Solarbrite created a backpack called "Solar Backpack" which has a detachable battery pack placed inside its back pocket. This project revolves around the last stage of the Solar Backpack project: implementing the usage of the Solar Backpacks in make-shift refugee schools with the aim to promote short-term and long-term sustainable peace in a region facing refugee crisis and shortage of electricity.

The refugee crisis together with the energy crisis Lebanon faces has further neglected the chances for refugee students in Lebanon to receive proper education. The government of Lebanon struggles to offer proper educational facilities to the rising number of refugees that live in Lebanon after escaping from unsafe places like Syria and Palestine. One of the major problems that students face in these schools is that when they come back to their designated 'home' they cannot study at night due to no power. These students often must study in public areas such as under streetlights or fuel stations. These places are often unsafe for young children at night. Hence the energy crisis in Lebanon has worsened the lives of many refugee students.

By collaborating with the Center for Civic Engagement and Community Service (CCECS) at American University of Beirut (AUB) we decided that our project would be located at Shatila camp. Shatila is one of the 13 Palestine refugee camps in Lebanon. Shatila contains a mix of people. There are people from Syria, Palestine and refugees from other places. In response to the existing refugee crisis in Lebanon make-shift schools play a vital role and hence proved to be the perfect host site for us to work in.

These schools offer educational facilities for Syrian refugee children in informal tented settlements. The make-shift school was located inside a four to six story high building to cram as many people as possible into the camp. The buildings at the host-site were fully inhabited: laundry hung across

the huge gaps where walls used to be. The elements of people's lives, a table, chairs or bedding were visible, as if the walls had been peeled away just so we could see inside. Young infants to children up to the age of 15 roamed around the shatila camp and brightened the whole place up with their beautiful smiles and jolly personality.

There were concerns raised by Bucknell over the location of our project. We had initially decided to deploy our solar backpacks at a make-shift school near the Syrian border but decided against it in the end due to safety concerns. Also, there was a cause of concern that there might be a black market of Solar Backpacks started within refugee camp. In order to solve that problem we prioritized to cater to all the refugee students in one make-shift school.

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During my time in Lebanon I did not feel a great challenge in communicating with people. I can speak and read basic Arabic, so I was able to communicate freely. I was also accompanied by my professor, who is a native Arabic speaker that grew up in Lebanon, during the course of the trip. Coming from Pakistan I had a strong sense of what the culture of Lebanon would be like. I was amazed to see so many shocking similarities between the culture of Pakistan and Lebanon, that at times I could not tell the difference. So all in all, during the course of the project no challenges were encountered while communicating with people.

I define peace as a state where every individual is safe from any form of hostility and violence. I think for a region to be peaceful there should be a complete mutual respect, love and harmony between people of different religions, race, and socio-economic sects.

This project had the goal of promoting peace by providing a safer and more sustainable way for refugee students to thrive in Lebanon. Many of these refugee students face the arduous task of surviving in a place where they constantly struggle to cope up with the different curricula, language barriers, harassment, violence, and discrimination. These challenges cause many student refugees to drop out of school. While economic pressure pushes young boys out of school and into the labor force, the effect on young girls is that they are often forced into early marriages. Some reports estimate 290,000 refugee children missed 49.6 million school days in total in 2017. This project focused on deploying solar backpacks inside make-shift schools in Lebanon. The back pocket of the solar backpack allows small solar panels to be charged through receiving direct sunlight. The charged battery can power a detachable LED light and also has an inbuilt LED flashlight. These refugee students could easily study in their camps using the LED flashlight powered by the solar-powered battery pack. The solar backpacks provided a peaceful solution to the refugee crisis in the short run because the students no longer are forced to study under street lights late at night. Inside the shatila camp, a part of the project focused on running two workshops which included hands-on activities that taught refugee students how to correctly make use of the Solar Backpack technology and learn about renewable energy resources. The students were provided with solar-power toy cars which they assembled independently. This inculcated an interest of renewable energy in the bright minds of these young refugee students.

The project has made me realize how lucky I am to be studying in a private institute like Bucknell. I appreciate what life has given me a lot and I am thankful for it. I have realized the importance of small things in life that I easily take for granted: school, family, friends, and most importantly having a place to call 'home'.

“While I was inside the Shatila Refugee camp I could not decide whether I was more affected by the poor state these refugee students were living in or whether I was more moved by the bright smiles of these brave children who have gone through so much in life. “ - Shehryar Asif

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