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# MEMORANDUM

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**TO:** EILEEN CASHMAN AND LESLIE MILLER-ROBBIE  
**FROM:** MARIA CLARINDA MILLER  
**SUBJECT:** SERC AND CCAT VISITATION  
**DATE:** APRIL 17, 2016

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**Purpose:**

The purpose of this memorandum is to discuss the environmental and societal impacts made by Schatz Energy Research Center (SERC) and Campus Center for Appropriate Technology (CCAT) that were mentioned while visiting said sites on April 15, 2016. A specific example of a positive impact made by SERC will be included.

**Discussion:**

The tour guide at the SERC discussed a few current projects, including one that takes place in Bhutan, a Buddhist kingdom located in South Asia. This project highlights the importance and positive impacts made by the "GridShare" technology that has recently been introduced to communities in Bhutan.

Before GridShare was introduced, Bhutan faced a frequently occurring problem that affected people's daily lives; brownouts. Brownouts, as stated by the tour guide, are times in which voltage drops across communities, resulting in malfunctioning appliances. This issue can be especially troublesome for the people of Bhutan due to the fact that one of their staple foods is rice. According to the tour guide, the people of Bhutan are known to have rice with just about every meal, so dysfunctional rice-cookers caused a great inconvenience.

Since GridShare was introduced, the occurrences of brownouts have been declining. GridShare notifies its users before a brownout happens using an LED display. This allows for residents to plan ahead and avoid any interferences that may occur while preparing dinner or completing other tasks that involve the use of household appliances.

This project was incredibly interesting, especially since it comes with major societal and environmental benefits. For example, not only does GridShare promote usage of renewable energy, but it is also of low costs and helps educate the general public on reliable methods of conserving and distributing energy. Learning about brownouts was thought-provoking, especially since it seems to be a problem that is hardly ever brought up or thought of in first-world civilizations.

**Conclusion:**

The tours of SERC and CCAT were extremely informative and enabled students to learn more about current environmental issues that are taking place throughout the world. The issues mentioned by the tour guides of both locations were applicable to Environmental Resources Engineering and are easy to become involved in by simply volunteering.