



## Request for Proposals: LCA+U

Proposals Due November 22<sup>nd</sup>, 2013 by email to [erlennox@eswusa.org](mailto:erlennox@eswusa.org)

### Introduction

Engineers for a Sustainable World, in partnership with Sustainable Minds, a Boston-based company that has developed an easy to use life-cycle assessment (LCA) tool and ecodesign approach, is pleased to announce the 2013-2014 edition of the LCA+Universities project, which allows accepted team to design more sustainable alternatives to current campus activities, quantify environmental benefits, and gain valuable skills in need-finding, ideation, and LCA.

### Motivation

In the design process, engineers often consider many long-term factors of designs: degradation of performance, resilience, reliability, and other objectives all impact the final solution to a challenge. Increasingly, LCA is playing a role in these decisions to allow engineers to understand the full environmental, economic, and health impacts of their solutions and decisions. As leaders in sustainable engineering, ESW members should be well-versed in the methods and tools of LCA. This will enable them to utilize and advocate for consideration of LCA alongside traditional objectives and metrics at their universities and in their careers.

Another emerging trend in engineering is the exploration of new, more environmentally-friendly solutions to old problems. Even topics as simple as food buffets in a university dining hall are being reexamined in light of emerging trends toward greater sustainability. Students who wish to be at the forefront of sustainable design must understand how to identify problems for which new solutions are appropriate and how to decide between solutions. To do so, students should reach out to a broad set of stakeholders involved with each challenge and work to gather as much input as possible to generate the best possible solution. These skills translate into the professional world where problems with pre-defined solutions can be revisited or rethought to better meet the needs of the client.

### Opportunity

LCA+U is an opportunity for ESW chapters to work with their campus communities to identify, evaluate, and recommend new solutions to existing campus operations. Student teams will first work with campus staff (Facilities and Maintenance, Sustainability Coordinators, Dining Services, Faculty etc.) to identify an opportunity that is meaningful and realistic for their campus. Ideal project topics should be well-defined systems or sub-systems, affect a large number of students or other university personnel, and be open-ended, meaning that there is not an obvious solution but room for idea generation. For example, some opportunities for improvement may include food distribution between dining halls, transitioning to a paperless office in the engineering department, and distribution or use of cups at sporting events.

Once a well-defined opportunity for improvement and redesign has been identified, ESW teams will gather input on the challenge from all appropriate stakeholders (anyone affected by the system being redesigned). Teams will then brainstorm solutions that would provide the same or improved service to the campus community while also potentially improving the sustainability of the process or operation. To understand this latter portion, teams will be given training and granted access to Sustainable Minds'

LCA software. This program will allow students to calculate the global warming and environmental impacts of the various alternatives as well as the existing situation. Teams will also develop economic models with the appropriate stakeholders in order to understand the fiscal impacts of the alternatives. Finally, teams will consult with stakeholders to elicit their feedback on the developed alternatives. Using the numerical analyses and the user feedback, teams will create to a final recommendation to be presented both to their campus community and ESW-National via a webinar. Teams will document their efforts throughout the project, and submit a final report of no more than 10 pages in text and 10 pages in appendices to ESW-National. (Guidelines on this report will be provided).

## **Proposals**

ESW Chapters are invited to submit up to 3 proposals per chapter by November, 22nd. Proposals are limited to 2 pages in length with up to 4 additional pages allowed for appendices including figures, maps, etc. ESW and Sustainable Minds will review the proposals and notify awarded chapters by December 9th.

Proposals will be evaluated on quality and the ability of the proposed project to impact campus operations and sustainability. Proposals are expected to include:

- Description of the problem under study: Teams should describe the opportunity, the current solution, the services provided by the current solution or desired by the stakeholders, and key metrics and design parameters for the system to be studied.
- Interaction with stakeholders: Describe who on the campus was involved in identifying this opportunity for improvement, who else was consulted, who is impacted by the problem, and who the team plans to meet with and work with to develop alternatives.
- Initial solutions: Teams should brainstorm 2-3 initial alternatives. These do not have to be very well developed or tested at the time of the proposal, but should demonstrate that alternate solutions are available that meet the needs of the service.
- Plan for completion: Teams should propose a realistic schedule in the confines of their university schedule and the difficulties anticipated in contacting all stakeholders. This should list not just dates by which certain work will be completed but express an understanding of the scope of work to be conducted in each stage (stakeholder consultation, ideation of alternatives, LCA and economic testing of alternatives, feedback from stakeholders on alternatives, final presentation and recommendation)
- Contact information (email and phone number) for student members and one faculty or staff member who can serve as a second point of contact

## **Timeline**

These projects will encompass a single semester or one and a half quarters for each university as follows:

- Nov 22<sup>nd</sup>, 2013: Proposals due by email to [erlennox@eswusa.org](mailto:erlennox@eswusa.org)
- Dec 9<sup>th</sup>, 2013: Selected chapters issued Notice to Proceed by email
- Dec 16<sup>th</sup>, 2013: Chapters receive software access from Sustainable Minds
- January, 2014 (Date TBD): Software training session with Sustainable Minds
- April 25<sup>th</sup>, 2014: Final reports due to ESW National
- May 7<sup>th</sup>/8<sup>th</sup>, 2014: Webinar with Sustainable Minds to highlight projects

## **Questions**

For more information or with any questions, please contact Erin Lennox at [erlennox@eswusa.org](mailto:erlennox@eswusa.org).