

Campus Energy & Emissions Report for UC Santa Cruz

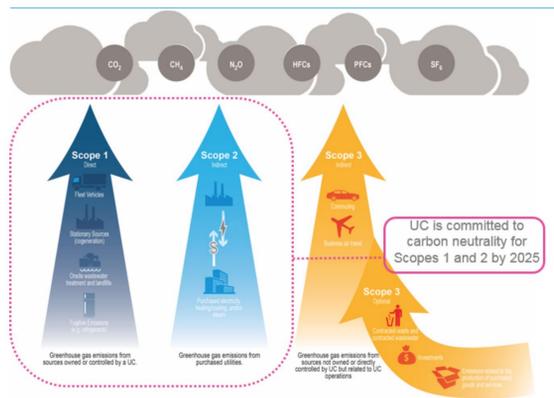
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Introduction

Our campus community at UCSC cares deeply about the topic of climate change. There are researchers studying climate change, staff members devising ways to adapt to it, and student groups entirely dedicated to fighting it.

However, with the natural institutional turnover of the campus community, campus affiliates need constant education about the Carbon Neutrality Initiative and guidance on how to engage with it. This is why we need to be more transparent and accessible with our carbon neutrality goals and progress. Not only is it important for the sake of access to information, but also for the ability of students to aid us in reducing our campus's emissions. We drafted an Energy & Emissions Report for our campus to accomplish this.



Project Goals

The goals of the Energy & Emissions Report were to:

1. Educate the campus community on the Carbon Neutrality Initiative, UCSC's current energy consumption and emissions, and carbon mitigation efforts
2. Give campus affiliates the knowledge/resources they need to run meaningful emission reduction campaigns and projects
3. Inform individuals on ways they can engage with the Carbon Neutrality Initiative

Get Involved!

- Green Office Certification Program
- Green Labs Program
- Sustainable Certificate Program
- Carbon Neutrality Fellows
- Student Sustainability Advisers (EcoReps)
- CALPIRG Students
- Student Groups & Activism

East Remote Solar Array

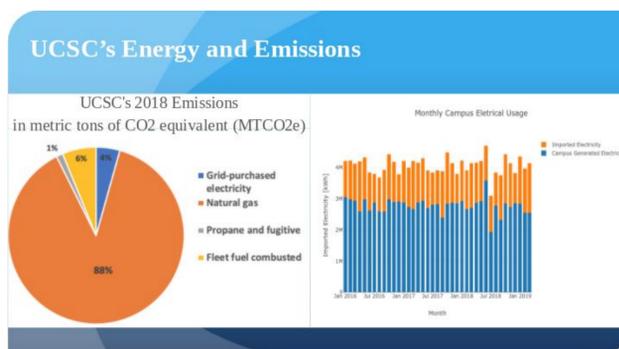
- 2MW array producing enough to power more than 330 houses for a year
- Will provide over 6% of UCSC's electrical demand
- 20+ year lifespan and save \$6 million in energy costs



Materials and Methods

Over the past year I created an Energy & Emissions Report that can be presented to classrooms, student groups, staff, and faculty. I also recorded videos that can be used instead of a live presentation. I used google slides to create this presentation and Zoom to record it. I also created a webpage dedicated to the Energy & Emissions Report.

The presentation was organized into five main sections. First an overview on the Carbon Neutrality Initiative and its goals. Secondly, I gave a background section on the campus's emissions and the climate consequences of those emissions. This section includes information like the breakdown of our emissions sources and monthly data on the campus's electricity use. After that the presentation describes several ways that the campus is working to reduce our emissions. For example, I included slides about our solar projects, LED lighting upgrades, biofuel purchases, carbon sequestration projects, and more. Next, there is a section on ways that students can help us reach carbon neutrality. This section includes campus specific resources for reducing emissions such as ride sharing with ZimRide, how to purchase light bulbs from the Million LEDs Challenge, and how to start your own Carbon Fund Project. Lastly, there is a discussion at the end of the presentation where students are able to consider ways they want to implement what they have learned.



Results and Outcomes

The presentation received positive feedback overall. Students learned new things and felt inspired to make a difference themselves. One critical piece of feedback was that it could be more engaging if it were offered as more of a discussion rather than predominately a presentation. In this format we could present an emissions problem on campus and ask the students to devise a way to solve it. This would allow students to think critically about the topic and how to tangibly reduce emissions on campus.

What was done well in the presentation including content, delivery, visuals, etc.?

9 responses

I really liked the colored graphs. I think they were really helpful when they were explained.

The visuals were engaging and informative visuals

Explained his examples well. Using the graphs to help visualizes efforts in reducing emissions.

Loved the visuals, had a good knowledge of most things and delivered it well

Well spoken, good answers to questions

Very helpful graphs and figures, and fantastically informational content. Delivery was awesome, the flow worked really well and the slides were presented in a logical and understandable order!

The content and delivery were done very well!

I think the use of visuals and charts was excellent, especially with all the infographics. I also thought all the step by step breakdowns of confusing topics was helpful. In terms of presenting, I also thought you did a great job staying focused on the audience, and maintaining a friendly atmosphere to ask questions in.

Incubator Replacement Project

Another project that I worked on this year was the Incubator Replacement Project which was a Carbon Fund grant proposal to replace outdated incubators in order to increase energy efficiency in labs. Virtually all incubators are left running 24 hours a day so their replacement can result in significant electricity savings. I researched a similar successful project done by the Lab Rats at UC Santa Barbara. I calculated that the replacement of the six most outdated incubators would save 54,399.6 kWh/yr which equates to a 7.8 year return on investment. I submitted the proposal for the replacement of six incubators at the total cost of \$82,681. The Carbon Fund has expressed interest in the proposal and is also looking for me to consider organizing an incubator incentive program so that all new incubators coming on campus are as efficient as possible.



Conclusions

In order to reach our goal of Carbon Neutrality by 2025 it will be important to actively involve our campus community and the Energy & Emissions Report is a good way to accomplish that. However, I believe there is a lot of room for this project to grow and I'm excited to see what my successor will do with this project.

Future Goals

The Sustainability Office is impressed with the feedback I've received from the presentation of the Energy & Emissions Report and has stated that they would like it to be an ongoing project on our campus. Next year's Engagement Fellow can continue to build upon it by offering it in the future as recorded videos and then going into classes to have a problem-solving discussion.

This is a project that can translate well to other campuses and I encourage other Engagement Fellows to consider this as a future outreach and engagement project.

Acknowledgements

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