

Group number: May1727

Stand-alone hybrid solar and wind power station.

Advisor: Dr. Ajarapu

Team Members/Role:

Nathaniel Byrne, Group Leader
Brian Gronseth Tech Lead
Jeffrey Szostak, Tech Lead
Mike Trischan
Eric Cole
Matthew Lee & Communications Lead

○ **Weekly Summary (Short summary about what you did this week)**

This week we focused primarily on completing our Project Plan v1.0. We have made some more progress on the simulations of our models as well but will need to get some more help from Ankit and other resources in order to create robust models.

○ **Past week accomplishments (please describe as what was done, by whom, when)**

Finishing the project proposal was the main focus on the later end of the week. We originally wanted to focus on finishing the entire main simulation.

Nathan and I worked on the project plan v1 on Tuesday the 11th and answered all questions that were listed in the template.

Solar team worked on producing IV plots to confirm our knowledge of the formulas we have been studying. Working on Thursday, October 13th, we were able to get all the way to adding the mppt and load in, but weren't sure of the results we were getting.

Sunday the 16th, senior design team met up to finish the project plan V1.

The group wrote the Project Plan. We began it Tuesday and finished it Sunday.

Michael Trischan and Jeffrey Szostak met with Nicholas David and talked to him about Wind Turbines. Nick offered to let the Senior Design group borrow his anemometer. Jeffrey Szostak drove to an off campus warehouse and picked it up. Mike, Jeff, and Nick also discussed different ideas for the project

<p>and ways to improve the Simulink models. The group Thursday worked together and improved the Wind and Solar Simulink models. Research was also done pertaining to Wind Turbines; specifically those that can operate at low wind speeds and those with sensors on them (for educational purposes).</p>
<p>Met with Nick David to learn more about wind energy and to talk about the scope of our project. Nick can help us with content from his previous projects and research- simulation/equipment/concepts. Worked on project plan.</p>
<p>Continued work on Simulink Model. Wrote the Project Plan.</p>
<p>All: Need to begin writing Project Plan V1.0 Request room access</p> <p>Solar Generate IV curves from simulated data Troubleshooting program Begin modeling a new battery circuit Finish lab manual (come up with improvements) Finish simulations</p> <p>Wind Meet with Matt Post (Tuesday) Talk to Mani about a budget Select a wind turbine Finish simulations</p> <p>Next steps, Finish simulation, get approval to install a turbine, combine models to make a hybrid system.</p>

○ **Pending issues (if applicable)**

<p>We were able to produce outputs in the simulations, but we weren't sure if the results we were getting were correct. Part of the issue is that we are trying to complete the previous groups lab work with only the lab document, which is vague and does not come with answers to verify the results we are getting.</p>
<p>None.</p>
<p>None</p>
<p>Simulink issues with generator block.</p>
<p>Still no clear idea of if/when we could install a wind turbine.</p>

○ **Individual contributions**

Name	Hours this week	Cumulative	Contribution
Nathaniel Byrne, Group Leader	6	20.5	Brian and I started the project proposal and the group as a whole finished it on Sunday. I was able to update the battery model in the simulink simulation and now the entire simulation part works unlike before.
Mike Trischan- Key Concept holder	6	21	Met with Nick David to learn more about wind energy and to talk about the scope of our project. Nick can help us with content from his previous projects and research-simulation/equipment/concepts. Worked on project plan.
Matthew Lee & Communications Lead	3	17.7	Continued working on our simulation of the solar plant. Improved our understanding of the model and hopefully have generated a robust model. Need to finish the lab report and obtain graphs of our outputs for presentation to Advisor.
Jeffrey Szostak, Tech Lead	8	26	I met with Nicholas David and acquired the Anemometer from him. I also began installing and understanding the necessary software for it as well as began understanding the hardware. I also did research pertaining to the Wind Turbines as well we called a few companies and asked them questions about their Turbines.
Brian Gronseth Tech Lead	6	14	Completed a portion of the previous design groups simulation lab and documented results with graphs. Worked on portions of the project plan, as well as edited project plan.
Eric Cole	4	20.5	Continued work on the wind Simulink model and proofread and corrected the project plan.

○ **Comments and extended discussion**

nope
We were able to get a lot of needed work done this week without meeting with the professor or TA, but are in need of some guidance with some of the results we are getting.
None.
matt is a pretty cool guy
NA
NA

○ **Plan for coming week (please describe as what, who, when)**

Both groups will continue with simulations, as stated from the prior week.
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Finish outputting graphs for the last portion of the lab and add the results into our presentation for the meeting this week.

Complete Wind and Solar Simulink models.

Set up the Anemometer outside of Coover.

Determine which Wind Turbine we want to purchase, or determine which parameters we should focus on.

Go to WESO meeting, call Alecko to get more information on some of their products (wind turbine)

Contact teaching assistant for more information and help on Simulink.

Finish simulations/models

Finish Project Plan v1.0

Acquire equipment to measure wind speed and irradiance

Update project timeline in light of new learning

Collect data on wind speed and irradiance

Present to advisor

○ **Summary of weekly advisor meeting (if applicable/optional)**

Meeting was cancelled due to the need for completing the project proposal.

NA

NA

Did not meet this week

Canceled for this week.

NA