

**May1727**

**Project Title: Stand-alone Hybrid Solar/Wind  
Power Plant**

**Advisors: Dr. Venkataramana Ajarapu & Ankit  
Singhal**

**Team Member – Roles**

Nathaniel Byrne - Group Leader

Brian Gronseth - Solar Tech. lead

Jeffrey Szostak - Wind Tech. Lead

Matthew Lee - Communications Lead

Mike Trischan - Key Concept Holder

Eric Cole - WebMaster

Executive Summary:

This week we focused most of our efforts on re-working our Project Plan and finalizing version 2.0. After accomplishing that and adding the changes necessary as per the BlackBoard comments, we split up into our respective teams to keep working on our project. The Simulink tech leads have found a model online that we may be able to help us but it needs to be discussed with the TA and others. Hardware is starting to become a bigger question and we are eager to see what we have and what we can buy or borrow from groups like WESO.

Past Week Accomplishments:

<p>Began talking with WESO about using their Wind Turbine for our Senior Design project. Looked at the current solar equipment and began determining what modifications are necessary. We went through each individual component of our wind turbine Simulink model and assessed how they work. The results will help us better find flaws in the larger model. We also found a working wind turbine Simulink model that we will reference in the future. We are doing the same with the solar Simulink model as well. We also researched (and continue to research) solar panels, which can replace the current solar panels that are mounted in Coover's courtyard.</p>
<p>Solar and wind team worked on the project plan V2. Solar team also worked with wind team on simulating their diagram. Solar team started to move on to hardware implementation the weekend of 11/13/16.</p>
<p>We continued work on simulations, revised our project plan, updated the website, researched purchasing hardware, and started testing existing hardware.</p>
<p>Matt and Eric have worked further with simulations. Eric has done some work on webpage. Jeffery is talking to WESO* in utilizing their Wind Turbine and associated administration issues. Brian did some inventory on Equipment and some research on possible new solar panels.</p>
<p>Coordinated with WESO- in the works of integrating one of their projects into ours. This would eliminate a huge problem of ours, acquiring an effective turbine for a reasonable price. Tinkered with and became acquainted with some of the lab equipment (solar panels/boost converter/rectifier). Worked more on simulations.</p>
<p>Brian updated project plan to expand the description and goals area on Sunday. Eric added page numbers, figure labels and reorganized our diagrams on Sunday. Nathan summarized our literary references and included proper citations in section 3.1 yesterday. Jeff wrote up a proposition to give to WESO to borrow their wind turbine and present at their meeting tonight. Mike and Eric then began testing some of the hardware components and seeing what works and what doesn't.</p>

Individual Contributions:

Name	Hours this week	Cumulative	Contribution

Nathaniel Byrne	2.5	31	I collaborated with Matt on the simulations for a short while. I added some content to the design document revision. After writing this I will do some research on new solar panels.
Brian Gronseth	5	30	Worked on a new project statement, purpose, and goals for the project plan V2. Started a list of all of the hardware that solar team was given to work with and started checking to see if components were giving a reading. Made a general plan on how to proceed with the hardware, revolving around retracing all of the wires to the components, labeling said wires, and creating a wiring diagram for future use. Looked into other solar panel options and pricing.
Jeffrey Szostak	7	47.4	I talked with WESO, or Wind Energy Student Organization, about integrating together their wind turbine with the wind turbine our Senior Design group needs. We discussed possible modifications to the turbine which suit our needs as well as how this would be done. I also helped set up the wind turbine in a field north of campus so we could test how the turbine operates when set up for a long period of time. On Sunday, I wrote up a report pertaining to the current turbine status as well as worked with the team on the Project Plan. I also modified the MATLAB script used to analyze the data obtained from the wind turbine and the anemometer it uses as well.
Matthew Lee	4.4	41.8	I itemized our deliverables and added due dates to update project plan to version two. Since I have begun transitioning to the group leadership role everyone also came to me for verification after their pieces were finished and I integrated them into the final report. I also helped Brian analyze some of our existing hardware and tested to see if our solar panels were operational. Lastly, I began re-analyzing our solar simulation and am still working getting all the pieces to work.
Mike Trischan	5	43	Coordinated with WESO- in the works of integrating one of their projects into ours. This would eliminate a huge problem of ours, acquiring an effective turbine for a reasonable price. Tinkered with and became acquainted with some of the lab equipment (boost converter/rectifier).
Eric Cole	8	41	I updated the website to include all of our documentation and include a larger description. I worked on breaking down our simulation model into testable pieces and finding a good example to base our design off of. I help revise and correct part of the project plan.

### Summary of Weekly Advisor Meeting:

Matt, Mike, and I met up with Professor Ajarapu, Ankit Singhal, and Pranav Sharma and discussed the project for an hour. The other members were busy at the time. We discussed WESO, the Simulink files, and future meeting times.

N/A

I was not able to attend due to a lab.

No meeting this week
Meetings have been moved to be bi-weekly to give us more time to work/make progress and our advisor meeting will be next week.

Plan for Next Week:

Continue communication with WESO about their wind turbine.
Solar team will continue working through simulations to trouble shoot the outputs we were getting. We will also begin to look into the hardware and start with the project plan that I laid out at the discretion of the TA.
Order any hardware needed. Meet with TA for help and discussion on simulation.
Continue what we are doing now. May be able to resolve what's necessary for the Wind Turbine.
Break up pieces of simulation and debug. Coordinate with WESO for turbine use and create a plan to make WESO turbine work for both parties. Meet with prof
<p>Tasks:</p> <ul style="list-style-type: none"> <li>All</li> <li>Attend all meetings</li> <li>Work on Project Plan v2.0</li> <li>Solar</li> <li>Break up pieces of simulation and debug</li> <li>Research existing solar panels</li> <li>Test and verify hardware</li> <li>Wind</li> <li>Break up pieces of simulation and debug</li> <li>Coordinate with WESO for turbine use</li> <li>create a plan to make WESO turbine work for</li> </ul>

Pending Issues:

We need some information from WESO about what modifications, if any, their wind turbine would need in order for our senior design group to use it. We should receive this information very soon. Other than that, we don't have any pending issues.
The solar panel setup is a giant rats nest of wires and components. At this point, we are unsure if anything works and are afraid to actually plug in the system because of the state of the wiring. Because the documentation is so poor on the wiring and layout of the hardware, this step of the project will probably take up a significant amount of time.
n/a
Time

Comments/Extended Discussion:

None.
Hopefully we can dismantle the current system and put it back together in a way that it is easier to understand and move forward.
NA
We may not be following our timeline to the letter in regards to what should be done before thanksgiving break, but I'm not sure.
MATT IS COOL
NA