EE 491 WEEKLY REPORT 7 & 8 ***Date:3/20/2017***

Group number: DEC1706

Project title: Renewable Energies Lab

Client &/Advisor: Prof. Ajjarapu

Team Members/Role:
Leader: Travis Merrifield
Webmaster: Elika Korhonen
Communications: Noah Chartouni
Idea Holder: Josh Pachl & Steve Ukpan

- **Weekly Summary**

Assigned a temporary schedule change to provide us with more time to get a deeper understanding of what our client was expecting for the weekly monday meetings. Will resume regularly meeting time next week. Before Spring break we spent time completing the design document as well as the website. No work was done over spring break. This week we started to research how a battery can be implemented into our model.

Past week accomplishments

We spent some time beginning studying the implications of a max power point tracking system as well as a battery installed into our system. Several of us spent time studying literature regarding batteries in a system as well as how they work, are sized, and modeled in standard usage. We completed the design document and cleaned up the website.

- **Individual contributions**

NAME	Hours this week	HOURS cumulative
Elika	7	51
Josh	7	45
Noah	5	35
Travis	5	43
Steve	5	43

  - **Elika:** Studied literature and concepts regarding battery usage in a standalone PV system. I learned about different battery chemistries and discharge methods. improved the citations of the design document. I also made it easier to add our weekly reports to be uploaded to the website.
  - **Josh:** Read about how to determine the max and min values for a Boost converter. Did some research into batteries and how they play a part in the pv system. Also thought of ways to present that information using simulink. Created tables and proofread the design document, making changes when needed.
  - **Noah:** Looked up basics of batteries and how they work. Looked at emerging technologies and how they might be useful to our current design or might improve our current setup.
  - **Travis:** Reviewed some material on batteries and how they integrate into our model. Completed a couple sections of the design document.
  - **Steve:** Skimmed documents on batteries for a pv system and how to model one in Simulink. Completed over half of the design document to include the intro, conclusion, design and appendix.

- **Plan for coming week**
  - **Elika:** Finish learning concepts regarding batteries and how they are used. Sizing a battery is also a major goal to accomplish as well as modeling usage during a 24hr period.
  - **Josh:** Continue to learn about batteries and begin implementing them in the current simulink model that we have. We will need to model different irradiances as well as changing loads in order to understand the role of a battery in the Solar PV system. A large part of this will also be to determine how to implement this with the MPPT.
  - **Noah:** Research batteries and how to integrate them into our system. I will work with our team to better understand and review the material we found.
  - **Travis:** I need to do more research on integrating a battery. Specifically what needs to

be in place so the system knows when to charge or use the battery. How does the system know when to use power from the battery to get max power? Our sister group may have some data/insight that we can pick their brain about.

- **Steve:** Find limitations of load size for our boost converter. Determining how to size a battery for a continuous system