EE 491 Weekly Report **MAY15-21** **Week 11 (11/11/14-11/18/14)**

Advisors: Venkataramana Ajjarapu **Client:** Venkataramana Ajjarapu

Members (roles):

- Daoxi Sun- *web master*
- Riley O'Connor- *team leader*
- Trevor Webb-*communication leader 1*
- Shihao Ni – *web master*
- Xiaokai Sun- *communication leader 2*
- Ben Ryan- *concept holder*

Project Title: Hybrid Solar Wind Generation System

Weekly Summary

The main goal this week was to advance the model of our design in Simulink. The solar team and wind team each began separate models, and once each model simulates the way we want it to the two will be put together for one comprehensive model.

Each group made progress with the simulations from last week to this week, but neither model is complete yet.

The whole group was able to meet with our advisor. They looked over what we had done so far and gave us some helpful advice for moving forward with our simulation models. Both groups made significant strides this week towards completing the simulations.

Meeting notes:

General Notes

I. Present solar material and wind material to our advisor

II. Focus on trouble shooting our simulations

III. The Solar team must document the battery and MPPT to their proven PV model

IV. The Wind team must design the circuit to let the battery provide power or to be charged

10/2 Group Meeting with Advisors

Duration: *60 min* **Members Present:** *All*

Purpose and Goals:
Present relevant background information over our project to both our advisor and our fellow group members. Both the solar and wind teams now have Simulink models, but were not complete models.

Achievements:
Both groups largely benefited from the meeting with the advisor, who helped areas of each simulation that was not simulating as expected.

The solar team was able to successfully demonstrate a working PV model for electricity generated from a PV solar panel, and the boost converter is working properly. They further incorporated the battery and were successfully able to divert power to and from the battery.

The wind team was able to couple the turbine and the generator. The power, current, voltage data make sense. The battery can provide power but still need to be controlled and improved.

Pending issues

1. Simulating the solar generation and wind generation aspects in Simulink.
2. Modeling based on different conditions.
3. Combining the two models into one comprehensive model

Plans for next week

1. Wind team: (Ben, Xiaokai, Shihao) will meet to continue work on wind simulations
2. Solar team: (Riley, Daoxi, Trevor) will meet to obtain data on how much power is being diverted to/from the battery under several different loading situations.
3. Each team will also develop results that can be presented at our next meeting with our advisor and his grad student. The individual solar and wind simulations should be largely completed by our next meeting with our advisor.

Individual Contributions (this week)

Daoxi Sun: 9

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Riley O'Connor: 10

- Worked on Solar Simulink model
- Attended weekly advisor meeting
- Updated the project plan

Trevor Webb: 8.5

- Worked on Solar Simulink model
- Attended weekly advisor meeting
- Updated information in the weekly report

Shihao Ni: 10

- Work on Simulink models
- Attended weekly advisor meeting
- Research for simulation models

Xiaokai Sun: 10.5

- Work on Simulink models
- Attended weekly advisor meeting
- Test the simulation
- Edit weekly report

Ben Ryan: 12

- Work on Simulink models
- Attended weekly advisor meeting
- Put the battery into the simulation
- Collect simulation data

Total contributions for the project

Daoxi Sun (59 hr)
Riley O'Connor (60.5 hr)
Trevor Webb (59 hr)
Shihao Ni (65 hr)
Xiaokai Sun (63.5 hr)
Ben Ryan (67 hr)