

Advisors: Venkataramana Ajarapu

Client: Venkataramana Ajarapu

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.

Parts of both groups were 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.

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 incorporate the battery and MPPT to their proven PV model
- IV. The Wind team must . . .

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 were struggling with simulation errors, and both largely benefited from the advice of using a step-by-step approach to simulating and constantly verifying results along the way.

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.

The wind team was able to rectify the output of the generator, filter it with a capacitor and add a battery in parallel with the load. Then some tests for the parameters of the simulation can be done.

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 incorporate a battery and the MPPT in their design
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: 7

- Work on solar simulation

Riley O'Connor: 6

- Worked on Solar Simulink model
- Attended weekly advisor meeting

Trevor Webb: 8

- Worked on Solar Simulink model
- Attended weekly advisor meeting
- Updated information in the weekly report
- Modeled PV data in Excel

Shihao Ni: 12

- Work on wind simulation model
- Research simulation model

Xiaokai Sun: 10

- Edit weekly report
- Work on coupling turbine and generator

Ben Ryan: 13

- Researched variable speed PMSG systems
- Designing, testing, and data collection for wind simulation model
- Troubleshooting

Total contributions for the project

Daoxi Sun (50 hr)

Riley O'Connor (50.5 hr)

Trevor Webb (50.5 hr)

Shihao Ni (55 hr)

Xiaokai Sun (53 hr)

Ben Ryan (57 hr)