

Team Meeting

9/26/2018

1:15 pm

306E Library

Type of meeting:	Meeting with Client
Note taker:	Nur Sabrina Shuazlan

Attendees: Whole team present except for Yao Jiang Cheah (YJ)

Please read:

Please bring: Laptop

Minutes

Agenda item: Safety Moment

Presenter: Tam

Discussion:

Battery safety. Don't mix and match your batteries of different brands, types, and old and new. Don't swap polarity, and don't use damaged or batteries with leakage.

Agenda item: Solar Power Plant Cost and Array Parameter Tool

Presenter: Katayi and Nur

Discussion:

Based on the results that we got from the Array Parameter Tool, we figured out the number of components, their prices, and the total cost of the solar plant. To build the solar plant, we'll need 237,312 panels, 252 combiner boxes, 46 inverters, and 243.8 acres of land. The prices of the components and the total cost of the plant are listed in the figure below.

Solar Plant Cost		
Panels	48.411648	million \$
CBs	0.32270112	million \$
Inverters	19.8774625	million \$
Land	2.925552901	million \$
Total Cost	71.53736452	million \$

When using the Array Parameter Tool, our inputs were values that were given to us and also the values from the solar panel datasheet. During the meeting, Katayi asked about the units of Temp Coeff of Voc. Cole said he would ask Adam about the units and will get back to us. We also asked about the panel width and height, and if the values should be swapped. Cole mentioned that we should round up the string size to 33 instead of 32 since it will give us a closer voltage value to 1500 VDC.

Conclusions:

Cole will get back to us with:

- The price of the inverter, and if we should consider the price of the racks
- Units of temperature coeff Voc
- Panel width and height in array parameter tool

Action items	Person responsible	Deadline
✓ Cole will get back to us with the information above	Cole	10/1 at 4 PM

Agenda item: Solar Power Plant Sketch **Presenter:** Nur

Discussion:

Based on the Array Parameter results, we designed a rough layout for a single rack, a single array, and the entire power plant. We also labelled the width and height of the racks, arrays and solar plant.

Conclusions:

This sketch will be reviewed once a specific location is picked.

Action items	Person responsible	Deadline
✓ Make array layout for 3 locations: Texas, California, New Mexico, make sure the land is cheap	Student Team	10/1 at 4 PM

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Agenda item: Location Review **Presenter:** Ahmed

Discussion:

Ahmed talked about the MISO North Star Solar Project that is located in Minnesota, and that they used single axis tracking to maximize production. The solar radiation that the area gets annually is three times less than what California gets. We are also considering other Southern states, like Texas, Arizona, and New Mexico because those states will most likely be cheaper than California.

Conclusions:

We decided to have one of the Southern states for our solar plant location because having a tracking rack system would significantly increase the project cost. Cole asked us to use Google Earth to narrow down an area.

Action items	Person responsible	Deadline
✓ Use Google Earth to narrow down an area for solar plant location	Student Team	10/1 by 4 PM

Agenda item: Justification **Presenter:** Chufu and Ahmed

Discussion:

Chufu did the justification for the inverter, and Ahmed did the justification for the solar panel. We are using the polycrystalline instead of the monocrystalline solar panels because the monocrystalline only have a slightly higher efficiency, but they cost almost twice as much. Also, the panels that we are using are one of the cheapest in the market.

Conclusions:

We are going to stick with the 325W Hanwha polycrystalline panels because they are more cost-efficient.

Agenda item: Gantt Chart **Presenter:** Nur

Discussion:

We did a rough sketch of our Fall 2018 Gantt Chart.

Action items	Person responsible	Deadline
✓ Keep track of the hours spent on each task	Student Team	10/1 by 4 PM
✓ Cole will get back to us with per hour charge	Cole	10/1 by 4 PM

Other Information

Resources:

- Google slides for Week 4 Meeting
- Past Black & Veatch project (May 2016)
- <http://www.longtermsolar.com/ideal-direction-for-solar-panels-in-california/> (tilt angle)
- <https://www.civicsolar.com/support/installer/articles/how-do-you-space-ground-mounted-array> (distance between racks)

Special notes: None