

EE 491 Weekly Report 4

10/03/2024 to 10/10/2024

Team 41

115/34.5kV Solar Plant & Substation

Client: Black & Veatch

Faculty Advisor: Ajjarapu Venkataramana

Team Members:

Andrew Chizek

David Ntako

Ben Palkovic

Mohamed Sam

Sergio Sanchez Gomez

Dallas Wittenburg

Past Week Accomplishments

- Weekly Presentation – All
 - Safety Moment: Proper PV Module Installation
 - New Technology: Solar Tracker
 - Tilt and Row Spacing
 - Equipment Selection
 - Array Parameter Tool
 - Cost Estimation.
 - Put together preliminary cost estimations covering combiner boxes, land, labor rate and duration based on current selections of equipment
 - High efficiency, less acreage compared to less efficiency, more acreage farms
- Array Parameter Tool – Ben
 - Updated our model/version of our array. Did research about ground coverage ratio and row spacing

Pending Issues

- Finding accurate cost estimations for our selected combiner boxes and inverter. Quotes have been requested but have not heard a response yet

- Compare Cheap vs Expensive panels for land usage.

Individual Contributions

Name	Contribution	Hours this Week	Total Hours
Andrew	Researched and presented about the physics of a PV Module. Helped with the research about tilt of our panels and updated the cost estimation through the research done about those products.	6	14
David	Helped reach out to find pricing on equipment	6	9
Ben	Researched ground coverage ratio and row spacing for the solar array. Made a new model using the array parameter tool using a different panel and larger combiner box	6	17
Mohamed	researched solar tracker systems and the proper installation of photovoltaic (PV) module.	5	16
Sergio	Power point slides. Research about voltage drop calculation.	3	16
Dallas	Researched cost of monocrystalline, polycrystalline, thin-film solar panels and their efficiencies vs cost of land in Luna County, NM for cost analysis	6	17

Plans for Coming Week

Action Items for Client

- Sign NDA and IP agreements
- Send parameter tool
- Work on gantt chart
- Start working with AutoCAD for drawings
- Begin working with Voltage Drop Calculation Tool
- Further expand on cost analysis