

# EE 491 Weekly Report 3

09/27/2024 to 10/03/2024

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: Personal Protective Equipment for Solar Workers
  - New Technology: Agrivoltaics
  - Solar Farm and Substation Location.
  - Land Requirements and Listing.
  - Equipment Selection.
  - Array Parameter Tool
  - Cost Estimation.
    - Put together preliminary cost estimations covering solar cells, combiner boxes, land, labor rate and duration based on current selections of equipment
- Array Parameter Tool – Ben
  - Created our first model/version of our array
- Website – Ben, Andrew
  - Began setting up our website and making sure all documentation we have completed so far is on it.

## Pending Issues

- Experiment with different panels to get a smaller array
- Compare Cheap vs Expensive panels for land usage.

## Individual Contributions

<b>Name</b>	<b>Contribution</b>	<b>Hours this Week</b>	<b>Total Hours</b>
Andrew	Researched land costs and labor costs for the preliminary cost estimate. Also started helping with updating the website. Helped pick out the preliminary inverter and attempted to research costs for the equipment we planned to use.	3	8
David	Research PV Module, Combiner Box, and Inverter	4	9
Ben	Began work on website. Created first model using array parameter tool.	4	11
Mohamed	Safety Moment. Research about New Technology	5	11
Sergio	Research the factors we considered when selecting the location in New Mexico, such as the number of sunny days, solar radiation levels, costs, and proximity to transmission lines. Additionally, understand how the website works.	8	13
Dallas	Worked on research about tax credits and incentives for commercial solar installations in New Mexico. Compared incentives of New Mexico with other state's in the U.S.	4	11

## Plans for Coming Week

### Action Items for Client

- Expand on Cost Estimations – change labor time frame to be longer – will take around a year to complete  
Around 1 month for every 10MW, 3-6 months for substation
- Start working with AutoCAD for drawings
- Look into changing parameters on Array Parameter Tool – Tilt, Voc
- Look into cost analysis of using higher-performing cells & using less land vs. using lower-performing cells & using more land