

For the PV array tracking, the team had to determine the orientation in which the and tilt of the arrays. Orientation of the array was chosen to be facing south since we are in the northern hemisphere. The decision on the tilt of the PV modules was determined from a shading analysis where a lower tilt is preferred during the Summer and Fall and a lower tilt is preferred during the Winter and Spring. To provide a higher energy production the team selected a horizontal single axis solar tracker (HSAT) system made by Array technologies. This single axis tracking system adjusts the face of the panel to follow the movement of the sun from East to West as well as the changing of tilt throughout the year. The advantages of having a horizontal single axis tracker is that they have a longer working life and are cheaper compared to dual axis trackers. HSAT can produce up a 15-16% increase in annual energy output compared to fixed tilt solar arrays installed at the same capacity. This tracking technology has been established for some time with little improvements. However, the cost of this type of tracking system has greatly decreased. This means the payback period is lesser for the investment of the project which translates to an increase in profits throughout the life of the system. Solar trackers can help to achieve an optimal level of energy output throughout the year.