

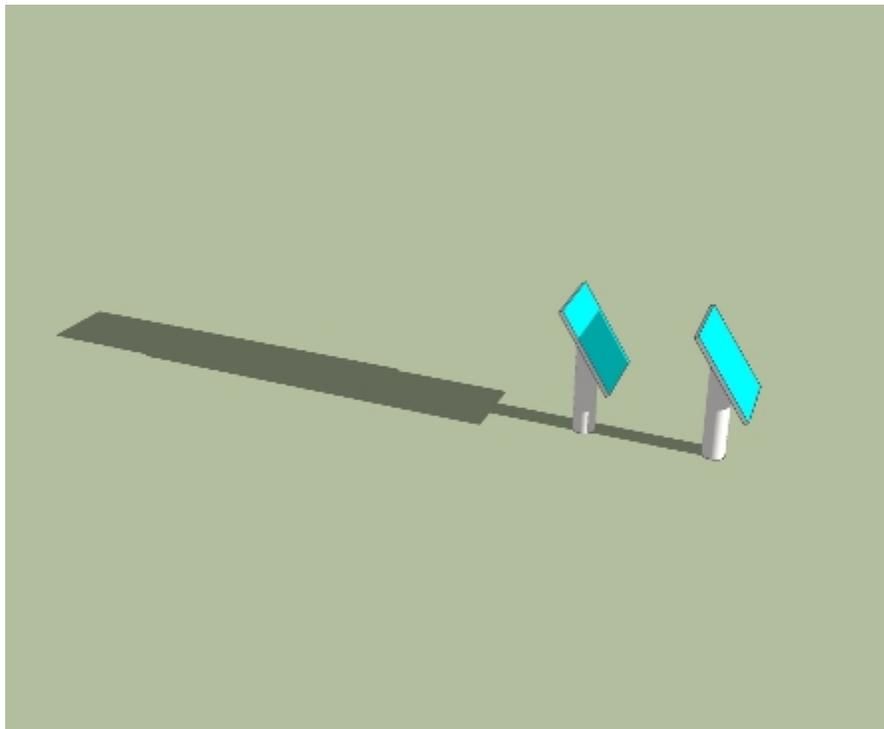


Backtracking

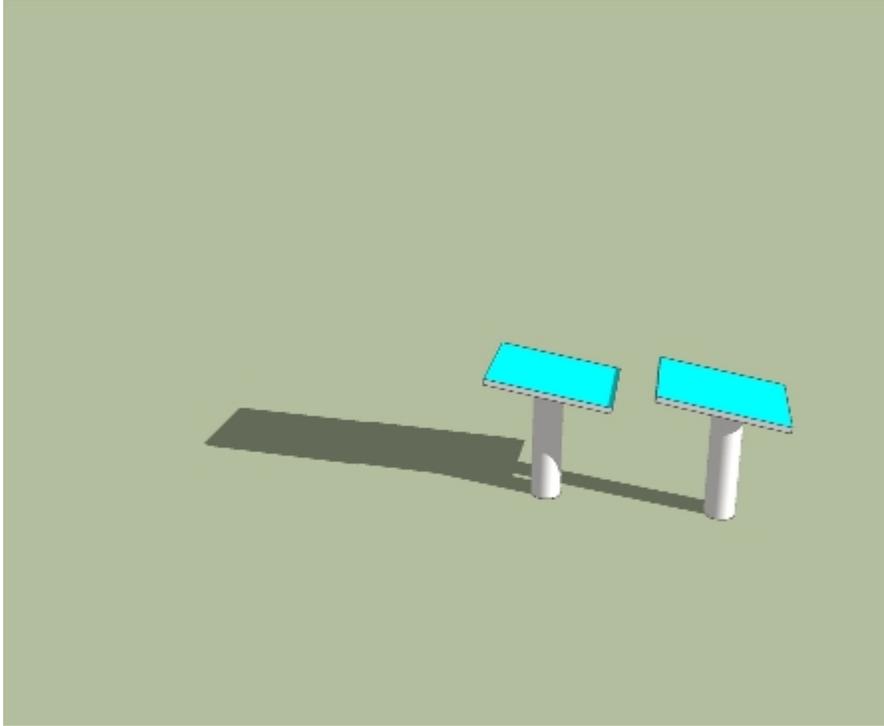
An array of single or dual axis solar tracker panels can be made more efficient by the use of backtracking. This is because at low solar angles, one panel may shade the panel behind it, rendering it less efficient. This effect is more pronounced in winter when the solar angles are lower.

A backtracking algorithm will take into account the position of the sun and the spacing, size and shape of the panels in the array to minimize shading and maximize orthogonality, so that the maximum amount of solar energy can be harvested. The topography of the site is also a factor. We suggest that an additional feedback mechanism such as an energy meter can be used in conjunction with the backtracking algorithm.

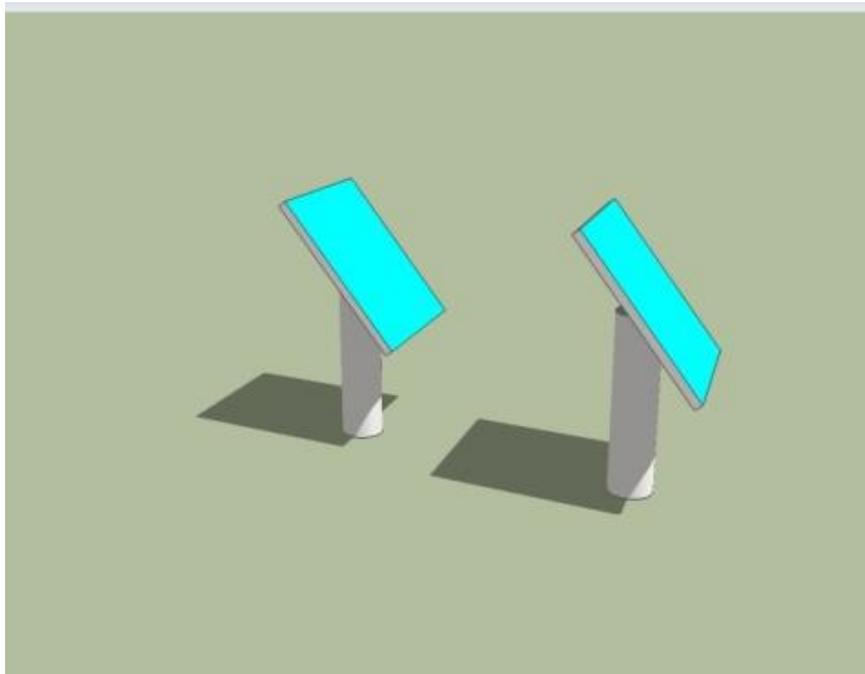
Lauritzen estimates when backtracking is used in conjunction with dual axis tracker control in a large commercial field, annual gains of 4 to 5% can be realized.



Low Sun Angle Single Axis System No Backtracking



Low Sun Angle Single Axis System with Backtracking



High Sun Angle, Single Axis System Direct Tracking