



Ground Fixed NET \$9,907 at 64.2 cents



Up to 48 panels
On 3 or 4 mounts
Azimuth Pointing
NET \$11,513 at
64.2 cents

Drop **N** GO

~3% Revenue

Dual Axis Tracker
Net \$11,882 at 64.2 cents



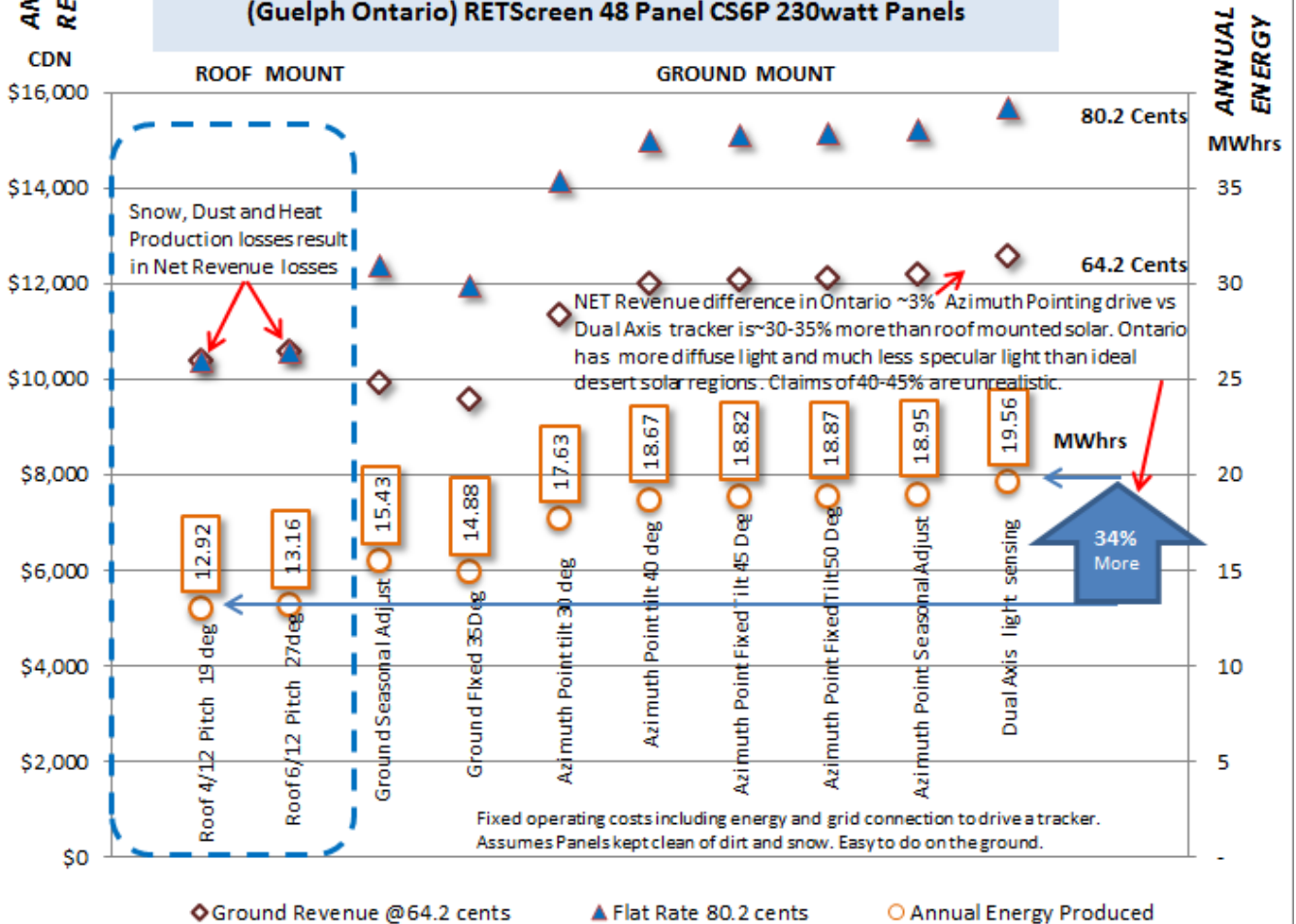
Roof Mount Fixed 6/12 slope

NET 10,950
At 80.2 cents



Compare Green Energy Produced vs Annual Revenue

MicroFIT 10kW - ROOF vs GROUND vs TRACKING vs Pointing Systems
(Guelph Ontario) RETScreen 48 Panel CS6P 230watt Panels





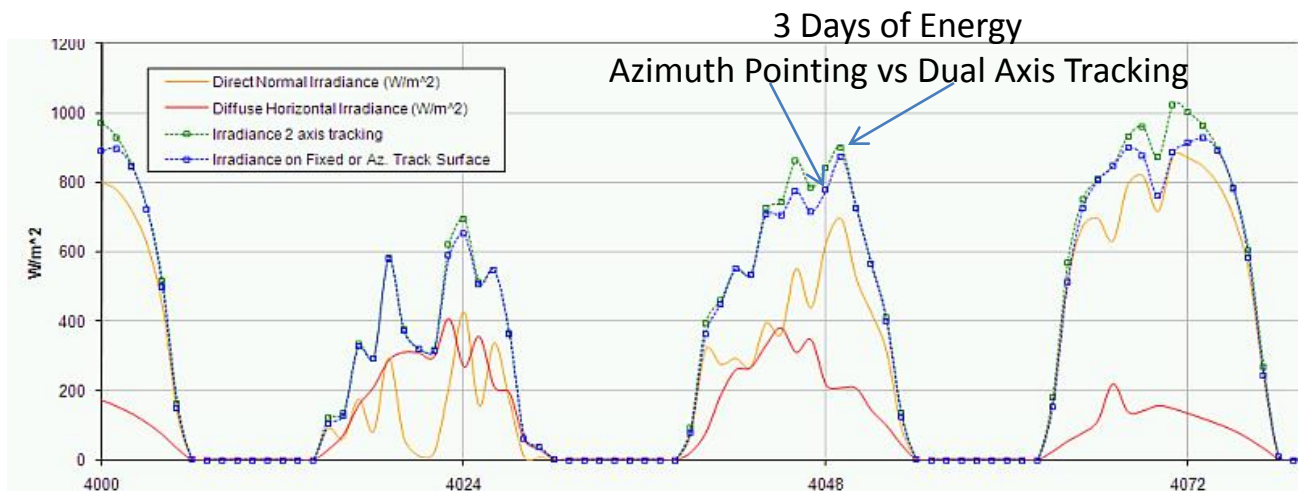
Sun Pointing vs Sun Sensing

Summer and Winter Array Tilt Angles

For roof or ground mounts, adjusting the tilt of the array only twice a year, to optimize production for summer and winter, will gain between 5 and 8% more energy than leaving a fixed array at an optimum angle all year. Adjusting the tilt angle every month adds only a small amount of extra production, possibly less than 2%.

Adjusting winter setting for Dec 21st (winter solstice) is largely a waste of effort since, in Canada at least, it is likely to be cloudy or even snowing that week and even if it is full sun all day the atmospheric attenuation at such a low angle and the few hours of sun there are will not collect any significant amount of energy over a what would be collected with a precise tilt angle. Better to optimize the array tilt angle for about 1st of Dec or 30 Jan.

Also, at all times around sunrise and sunset, when the sun is less than 15 degrees above the horizon, the atmospheric attenuation is very high, so pointing directly at early morning and late evening light is not nearly as valuable as the sunlight energy between roughly 8 am to 5:30pm in the summer and roughly 10am till 3:30 or 4pm in the winter.



Above is an example of diffuse vs specular (direct sun) light and what you can expect from sensing the brightest sunlight versus simply pointing within a few degrees of the azimuth with the array fixed at around 45 degrees. Note that precise tracking is only valuable in specular light such as in desert and high sun areas. In most of Canada at least, passive pointing systems gather over 93% the same energy annually as so called "dual axis" trackers and use a lot less energy in the process by not "chasing" the diffuse energy around clouds and snow much of the time. If you adjust the array tilt angle only twice a year (summer and winter) you'll capture nearly 97% of the energy a dual axis tracker can with less drive train energy and maintenance as well. You'll use less energy to drive the system, less wear and tear on motors and drive mechanisms, only 1 motor not two with many more bearings. Less complexity means higher reliability generally.

PPS uses no external AC power, No settings, No RESET in case of power failures, Simply turn it on. It will ALWAYS point at the sun. If you are hearing claims of 45% more energy than roof mounts, that may be true in central Spain or southern Arizona but here in Canada it's more like 30-35% because of the largely diffuse nature of the sunlight we receive.